ELECTRONIC MULTI-MEASURING INSTRUMENT
ME96NSR-MB
Interface specifications

SPEC.NO. LSPM-0075A

MITSUBISHI ELECTRIC CORPORATION

CONTENTS

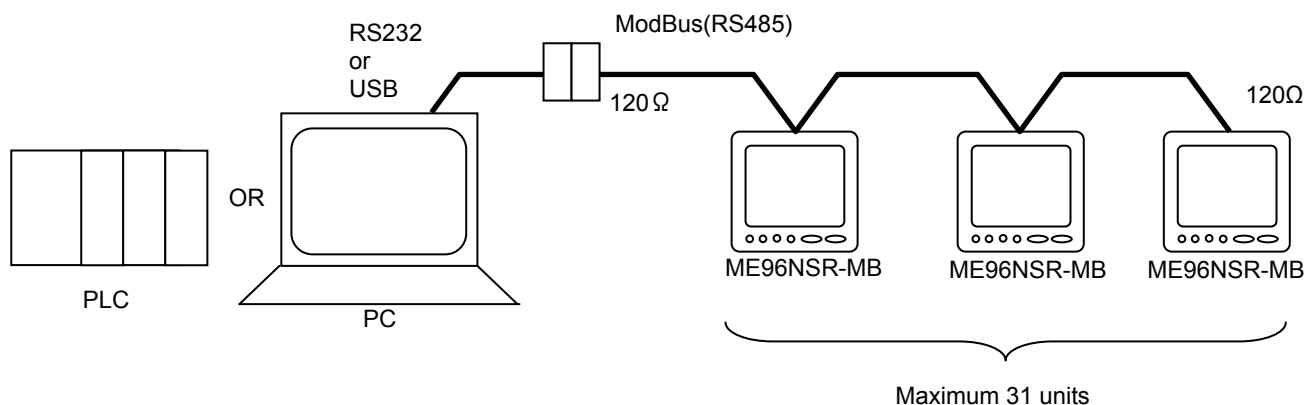# 1. Functions

Mitsubishi Electronic Multi-Measuring Instrument ME96NSR-MB provides measurement values with ModBus RTU protocol to a PLC or PC via an RS485 serial link (2 wires).

2. System Configurations

Maximum 31 units

※ME96NSR-MB performs a termination of 120 ohm resistance by short-circuiting the terminal of T/R- and Ter.

3. Technical Characteristic

| Item	Specifications
Physical interface	RS-485 2wires half duplex
Protocol	ModBus RTU mode
Transmission wiring type	Multi-point bus (either directly on the trunk cable, forming a daisy-chain)
Baud rate	2400, 4800, 9600, 19200, 38400bps (Default is 19200bps)
Data bit	8
Stop bit	1 or 2 (Default is 1)
Parity	ODD,EVEN or NONE (Default is EVEN)
Slave address	1～255(FFh) (Default is 1)
Response time	1s or less
Distance	1000m
Max. number	31
Terminate	120Ω 1/2W
Recommended cable	Shielded twisted pair, AWG24 to 14 gauge

4. Specification for Communication

For details, please download and refer to ModBus over Serial Line Specification & Implementation guide V1.02 posted on the following URL;

http://www.modbus.org/

4 .1 Standard Communications Frame

The standard communications frame consists of:

Slave address	Function code	Data			CRC(Lo)	CRC(Hi)
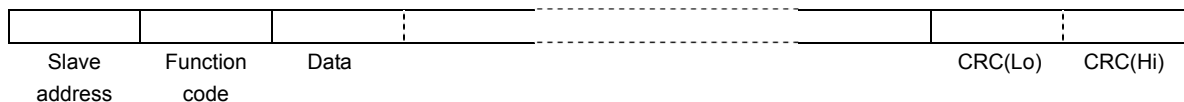
Slave address   : 01～FFH

    ※When selecting slave address 0, a message is sent to all the instruments present on the network. When the slave receives it, the slave does not make a response.

Function code   : 03H …… Read Holding Registers (maximum 250 bytes)

           : 08H …… Diagnostics

           : 10H …… Preset Multiple Registers

Data   : 8 bit HEX data

CRC   : The Cyclical Redundancy Check (CRC) field is two bytes, containing a 16-bit binary value.

<NOTE>

Procedure for generating CRC:

1. Load a 16-bit register with FFFF hex (all 1's). This is called the CRC register.
2. Exclusive OR the first 8-bit byte of the message with the low-order byte of the 16-bit CRC register, putting the result in the CRC register.
3. Shift the CRC register one bit to the right (toward the LSB), zero-filling the MSB. Extract and examine the LSB.
4. (If the LSB was 0): Repeat Step 3 (another shift).
   (If the LSB was 1): Exclusive OR the CRC register with the polynomial value 0xa001 (1010 0000 0000 0001).
5. Repeat Steps 3 and 4 until 8 shifts have been performed. When this is done, a complete 8-bit byte will have been processed.
6. Repeat Steps 2 through 5 for the next 8-bit byte of the message. Continue this until all bytes have been processed.
7. The final content of the CRC register is the CRC value.
8. When the CRC is placed into the message, its upper and lower bytes must be swapped as described above.

4 .2 Bit Sequence

With RTU character framing, the bit sequence is

<Example> With Parity Checking

Start	1	2	3	4	5	6	7	8	Par	Stop
	LSB							MSB		
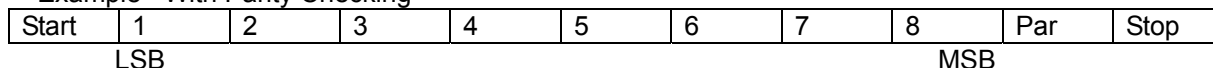
4 .3 ModBus Message RTU Framing

A ModBus message is placed by transmitting device into a frame that has a known beginning and ending point. This allows devices to receive a new frame to begin at the start of the message, and to know when the message is completed. Partial messages must be detected and errors must be set as a result.

In RTU mode, message frames are separated by a silent interval of at least 3.5 character items.
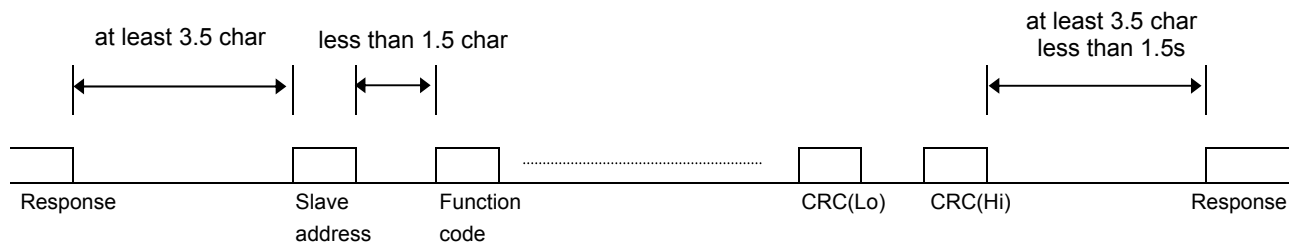
5. Framing of Query and Response

5 .1 Read Holding Registers (03H)

■ Query framing

**H	03H	Hi	Lo	Hi	Lo	Lo	Hi
Slave address		Starting address		Quantity of registers		CRC	

- Slave address : 1 to FFH
- Stating address : 2byte
- Quantity of registers : Maximum 125
- CRC : 2byte

■ Response framing (Maximum 255 bytes)

**H	03H		Hi	Lo	Hi	Lo		Lo	Hi
Slave address		Byte count	Data 1		Data 2			CRC	

- Byte count : Byte count of response data (Maximum 250)

＜**Example**＞ In case of monitoring from phase 1 current value (0300H) to neutral current value (0306H). Slave address is 01H.

■ Query framing

01H	03H	03H	00H	00H	04H	Lo	Hi
Slave address		Starting address		Quantity of registers		CRC	

■ Response framing

01H	03H	08H	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Lo	Hi
Slave address		Byte count	phase 1 current value		phase 2 current value		phase 3 current value		Neutral current value		CRC	

5 .2 Preset Multiple Registers (10H)

■ Query framing (Maximum 255 bytes)

**H	10H	Hi	Lo	Hi	Lo	Byte count	Hi	Lo	Hi	Lo		Lo	Hi
Slave address		Starting address		Quantity of registers			Data1		Data2			CRC	

- Slave address : 0 to FFH, 0 means broadcasting.
- Starting address : 2 bytes
- Quantity of registers : Maximum 123
- Byte count : Maximum 246
- Data1 ～ : Preset data (Minimum 2 bytes)
- CRC : 2byte

■ Response framing (If the slave address is 0 (broadcast), a response is not made.)

**H	10H	Hi	Lo	Hi	Lo	Lo	Hi
Slave address		Starting address		Quantity of registers		CRC	

＜**Example**＞ In case of presetting a primary current value (0204H). Slave address is 01H.

■ Query framing

01H	10H	02H	04H	00H	02H	04H	HH	HL	LH	LL	Lo	Hi
Slave address		Starting address		Quantity of registers		Byte count	Primary current Hi		Primary current Lo		CRC	

■ Response framing

01H	10H	02H	04H	00H	02H	Lo	Hi
Slave address		Starting address		Quantity of registers		CRC	

5 .3 Diagnostics (08H) (Sub function code 00H)

■ Query framing

**H	08H	00H	00H	Hi	Lo	Lo	Hi
Slave address	Sub function code			Data		CRC	

・Slave address : 1 to FFH
・Sub function code : 00H, 00H fixed.
・Data : 2 bytes (Any value)
・CRC : 2 bytes

■ Response framing

**H	08H	00H	00H	Hi	Lo	Lo	Hi
Slave address	Sub function code			Data		CRC	

・Data : Same as the data of query

6. ModBus Exception Responses

ERROR	Meaning	Exception code	Display
Framing error	Query framing is incorrect.	No response is returned.	COM in the display blinks until it receives the correct query.
Overrun error	1 byte data length is incorrect.		
Parity error	1 byte data is incorrect.		
CRC error	Framing data is incorrect.		
Illegal function	The function code received in the query was except 03H, 08H and 10H.	01H	
Illegal data address	The data address received in the query is not an allowable address for the slave.	02H	
Illegal data value	The data value received in the query is not an allowable data value for the slave.	03H	

■ Response framing

Address	※1	Exception code	Lo	Hi
Slave address	Function code		CRC	

※1 Function code : In an exception response, the server sets the MSB of the function code to 1.

＜Example＞

Function code in a query	Function code in an exception response
03h	83h
10h	90h

Example of illegal data address is shown as follows.

＜ **Example** ＞ In case of monitoring from total apparent power (Min)(0380H) to undefined address(0387H).Slave address is 01H.

■ Query framing

01H	03H	03H	80H	00H	08H	Lo	Hi
Slave address	Starting address			Quantity of registers		CRC	

■ Response framing

01H	83H	02H	Lo	Hi
Slave address	Illigal data address		CRC	

7. Data

7 .1   Data of Setup Registers (0200H to 020BH, 0600H to 0622H)

※ When a data in the preset multiple registers (10H) is 8000H or 80000000H, the data of the address is not changed. In case of collective setting, use the unpreset address.

(1) Phase Wiring

Phase wiring	Data
3P3W_2CT	0003H
3P4W	0004H
3P3W_3CT	0006H

(2) Primary Voltage value (Phase to Phase)
The set value is the data in which the voltage value is converted into 4 bytes.
(When the setup voltage is 6600V, the set value is 6600(000019C8h).)

① At 3P4W
- It is corresponding only 190V, 415V, 440V. And it changed as follows by set value.

Set value	Using VT/ Direct input	Direct voltage	VT secondary voltage	VT primary voltage
190V	Direct input	110V/190V	—	—
415V	Using VT	—	63.5V/110V	240V/415V
440V	Using VT	—	63.5V/110V	254V/440V

② At 3P3W_2CT, 3P3W_3CT
- At set the range from 221V to 750000V.
  - ➢ It is set "Using VT", and set the primary voltage which is transmitted.
  - ➢ From the most significant digit to 3 figures can be freely set up in the range of 221V to 750000V.
- At set 110V or 220V.
  - ➢ It is set "Direct input", and set the primary voltage which is transmitted as the direct input voltage.

(3) Primary Voltage Value (Phase to Neutral)
The set value is the data in which the 10 times voltage value is converted into 4 bytes.
(When the setup voltage is 63.5V, the set value is 635 (0000027Bh).)

① At 3P4W
- At set the range from 278V to 750000V
  - ➢ It is set "Using VT", and set the primary voltage which is transmitted.
  - ➢ From the most significant digit to 3 figures can be freely set up in the range of 278V to 750000V.
- At set the 63.5V, 100V, 110V, 220V, 240V, 254V or 277V
  - ➢ It is set "Direct input", and set the primary voltage which is transmitted as the direct input voltage.

② At 3P3W_2CT, 3P3W_3CT
- The exception code of illegal data address is replied.

(4) Secondary Voltage Value
- The set value is the data in which the 10 times voltage value is converted into 4 bytes.
  (When the setup voltage is 63.5V, the set value is 635 (0000027Bh).)
- Settable secondary voltage values are as follows.
  - ➢ 3P4W   : 63.5V, 100V, 110V, 115V, 120V
  - ➢ 3P3W_2CT,3P3W_3CT : 100V, 110V, 220V

(5) Primary Current Value
- The set value is the data in which the 10 times current value is converted into 4 bytes.
  (When the setup current is 7.5A, the set value is 75 (0000004Bh).)
- From the most significant digit to 2 figures can be freely set up in the range of 5A to 30000A.

(6) Time Constant for Current Demand
- The range of time constant is as follows.
  0s, 10s, 20s, 30s, 40s, 50s, 1min, 2min, 3min, 4min, 5min, 6min, 7min, 8min, 9min, 10min, 15min, 20min, 25min, 30min.
- The set value is the data in which the second unit value is converted into 2 bytes.
  (When the setup time is 2min, the set value is 120 (0078h).)

(7) 16 Bits Set/Reset Register

Bit	Data		
	Content	ON(1)	OFF(0)
b0	Reset of all alarm	executed	−
b1	Reset of all max/min value and counting of all energy	executed	−
b2	Reset of all max/min value	executed	−
b3	Unusable	−	−
b4	Set of digital output 1 (DO1) (Note1)	Set	Reset
b5	Set of digital output 2 (DO2) (Note1)	Set	Reset
b6	Unusable	−	−
b7	Unusable	−	−
b8	Reset of all digital input (DI) latch (Note1)	executed	−
b9	Unusable	−	−
b10	Unusable	−	−
b11	Unusable	−	−
b12	Unusable	−	−
b13	Unusable	−	−
b14	Reset of counting of all energy	executed	−
b15	Unusable	−	−

Note1: Depending on the option used, it becomes "Unusable".

(8) 16 Bits Register for Alarm Monitor 1

Bit	Data		
	Content	ON(1)	OFF(0)
b0	Digital input 1 (DI1)	ON	OFF
b1	Digital input 2 (DI2)	ON	OFF
b2	Digital input 3 (DI3)	ON	OFF
b3	Digital input 4 (DI4)	ON	OFF
b4	Digital input 5 (DI5)	ON	OFF
b5	Alarm (total)	Alarm	Non-Alarm
b6	Alarm of Demand current (Note1)	Alarm	Non-Alarm
b7	Unusable	−	−
b8	Alarm of Voltage (Note1)	Alarm	Non-Alarm
b9	Alarm of Current (Note1)	Alarm	Non-Alarm
b10	Alarm of Active power (Note1)	Alarm	Non-Alarm
b11	Alarm of Reactive power (Note1)	Alarm	Non-Alarm
b12	Alarm of Frequency	Alarm	Non-Alarm
b13	Alarm of Power factor (Note1)	Alarm	Non-Alarm
b14	Alarm of T.H.D (Voltage) (Note1)	Alarm	Non-Alarm
b15	Alarm of Harmonics current (Note1)	Alarm	Non-Alarm

Note1: For the alarm judging items, refer to next page.

(9) 16 Bits Register for Alarm Monitor 2

Bit	Data		
	Content	ON(1)	OFF(0)
b0	Upper limit alarm of current (phase 1)	Alarm	Non-Alarm
b1	Upper limit alarm of current (phase 2)	Alarm	Non-Alarm
b2	Upper limit alarm of current (phase 3)	Alarm	Non-Alarm
b3	Upper limit alarm of current (phase N)	Alarm	Non-Alarm
b4	Upper limit alarm of current (total) (Note1)	Alarm	Non-Alarm
b5	Lower limit alarm of current (total) (Note1)	Alarm	Non-Alarm
b6	Upper limit alarm of L-L Voltage (total)	Alarm	Non-Alarm
b7	Lower limit alarm of L-L Voltage (total)	Alarm	Non-Alarm
b8	Upper limit alarm of L-N Voltage (1-N)	Alarm	Non-Alarm
b9	Upper limit alarm of L-N Voltage (2-N)	Alarm	Non-Alarm
b10	Upper limit alarm of L-N Voltage (3-N)	Alarm	Non-Alarm
b11	Upper limit alarm of L-N Voltage (total) (Note1)	Alarm	Non-Alarm
b12	Lower limit alarm of L-N Voltage (1-N)	Alarm	Non-Alarm
b13	Lower limit alarm of L-N Voltage (2-N)	Alarm	Non-Alarm
b14	Lower limit alarm of L-N Voltage (3-N)	Alarm	Non-Alarm
b15	Lower limit alarm of L-N Voltage (total) (Note1)	Alarm	Non-Alarm

Note1: For the alarm judging items, refer to below.

■Alarm judging items of each phase wiring is shown as follows.

・Alarm judging items for 3P3W

	Upper limit	Lower limit
Demand current	Phase 1, 2, 3	Phase 1, 2, 3
Voltage	Phase 1-2, 2-3, 3-1	Phase 1-2, 2-3, 3-1
Current	Phase 1, 2, 3	Phase 1, 2, 3
Active power	ΣW	ΣW
Reactive power	Σvar	Σvar
Power factor	ΣPF	ΣPF
Harmonics voltage	Phase 1-2, 2-3	-
Harmonics current	Phase 1, 2, 3	-

・Alarm judging items for 3P4W

	Upper limit	Lower limit
Demand current	Phase 1, 2, 3, N	Phase 1, 2, 3
Voltage	Phase 1-2, 2-3, 3-1, Phase 1-N, 2-N, 3-N	Phase 1-2, 2-3, 3-1, Phase 1-N, 2-N, 3-N
Current	Phase 1, 2, 3, N	Phase 1, 2, 3
Active power	ΣW	ΣW
Reactive power	Σvar	Σvar
Power factor	ΣPF	ΣPF
Harmonics voltage	Phase 1-N, 2-N, 3-N	-
Harmonics current	Phase 1, 2, 3, N	-

7 .2   Multiplying Factor

Conditions of multiplying factor by setup of each element are shown below.

Element	Condition		Multiplying factor
Voltage Harmonics voltage	Primary voltage (Note1)	0V to 440V less than	×0.1
		440V to 3300V less than	×1
		3300V to 113.7kV less than	×10
		113.7kV or more	×100
Current Current demand Harmonics current	Primary current	5A to 40A less than	×0.01
		40A to 400A less than	×0.1
		400A to 4000A less than	×1
		4000A or more	×10
Active power Reactive power Apparent power	Primary rated power (Note2)	0kW to 1.2kW less than	×0.0001
		1.2kW to 12kW less than	×0.001
		12kW to 120kW less than	×0.01
		120kW to 1200kW less than	×0.1
		1200kW to 12000kW less than	×1
		12000kW to 120000kW less than	×10
		120000kW or more	×100
Active energy Reactive energy	Primary rated power (Note2)	0kW to 10kW less than	×0.01
		10kW to 100kW less than	×0.1
		100kW to 1000kW less than	×1
		1000kW to 10000kW less than	×10
		10000kW to 100000kW less than	×100
		100000kW or more	×1000
Active energy (extended) Reactive energy (extended)	Primary rated power (Note2)	0kW to 10kW less than	×0.00001
		10kW to 100kW less than	×0.0001
		100kW to 1000kW less than	×0.001
		1000kW to 10000kW less than	×0.01
		10000kW to 100000kW less than	×0.1
		100000kW or more	×1
Power factor Frequency Harmonics distortion	—	—	×0.1

Note1: At 3P4W, it is phase to neutral voltage.
Note2: How to calculate primary rated power is the as follows.

$$\text{Primary rated power}\ [\text{kW}] = \frac{\alpha \times (\text{Primary voltage}) \times (\text{Primary current})}{1000}$$

$$\alpha : \sqrt{3} \quad \text{3P3W\_2CT, 3P3W\_3CT}$$
$$3 \quad \text{3P4W (Primary voltage is phase to neutral voltage)}$$

7 .3 List of Parameters

(1) Setup Register

Address		byte count	R/W ※1	Register Name	RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
Dec.	Hex.								
512	0200h	2	R/W	Phase Wiring	Refer to 7 .1(1)		○	○	○
513	0201h	4	R/W	Primary voltage (L-L)	Refer to 7 .1(2)	V	○	○	○
515	0203h	4	R/W	Primary voltage (L-N)	Refer to 7 .1(3)	×0.1V	○		
517	0205h	4	R/W	Secondary voltage	Refer to 7 .1(4)	×0.1V	○	○	○
519	0207h	4	R/W	Primary current	Refer to 7 .1(5)	×0.1A	○	○	○
521	0209h	2	R	Reserved	0				
522	020Ah	2	R/W	Time constant for DA	Refer to 7 .1(6)	s	○	○	○
523	020Bh	2	R/W	16 bits Set/Reset register Note1	Refer to 7 .1(7)		○	○	○
524	020Ch	2	R	16 bits monitor 1	Refer to 7 .1(8)		○	○	○
594	0252h	2	R	16 bits monitor 2	Refer to 7 .1(9)		○	○	○

※1 R/W : Reads and writes register.
When a data in the preset multiple registers (10H) is 8000h or 80000000h, the data of the address is not changed.

R : Reads only register.
If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
The data of negative number is expressed a two's complement.
Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

Note1:When you read this register, b4,b5 of digital output are reflected to the present state of contact.
（Contact=open ⇒ "0" Contact=close ⇒ "1"）

(2) Instantaneous Value Register

Address Dec.	Address Hex.	byte count	R/W ※1	Register Name	RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
768	0300h	2	R	Phase 1 current	0 to 32767	A	O	O	O
769	0301h	2	R	Phase 2 current	0 to 32767	A	O	O	O
770	0302h	2	R	Phase 3 current	0 to 32767	A	O	O	O
771	0303h	2	R	Neutral current	0 to 32767	A	O		
772	0304h	2	R	Average value current	0 to 32767	A	O	O	O
773	0305h	2	R	Phase 1 current demand	0 to 32767	A	O	O	O
774	0306h	2	R	Phase 2 current demand	0 to 32767	A	O	O	O
775	0307h	2	R	Phase 3 current demand	0 to 32767	A	O	O	O
776	0308h	2	R	Neutral current demand	0 to 32767	A	O		
777	0309h	2	R	Average value current demand	0 to 32767	A	O	O	O
778	030Ah	2	R	Voltage V12	0 to 32767	V	O	O	O
779	030Bh	2	R	Voltage V23	0 to 32767	V	O	O	O
780	030Ch	2	R	Voltage V31	0 to 32767	V	O	O	O
781	030Dh	2	R	Average value voltage (L-L)	0 to 32767	V	O	O	O
782	030Eh	2	R	Voltage V1N	0 to 32767	V	O		
783	030Fh	2	R	Voltage V2N	0 to 32767	V	O		
784	0310h	2	R	Voltage V3N	0 to 32767	V	O		
785	0311h	2	R	Average value voltage (L-N)	0 to 32767	V	O		
786	0312h	2	R	Phase 1 power factor	-500 to +1000 to 500	×0.1%	O		
787	0313h	2	R	Phase 2 power factor	-500 to +1000 to 500	×0.1%	O		
788	0314h	2	R	Phase 3 power factor	-500 to +1000 to 500	×0.1%	O		
789	0315h	2	R	Σ Power factor	-500 to +1000 to 500	×0.1%	O	O	O
790	0316h	2	R	Frequency	445 to 999	×0.1Hz	O	O	O
791	0317h	2	R	Phase 1 active power	-16383 to 16383	kW	O		
792	0318h	2	R	Phase 2 active power	-16383 to 16383	kW	O		
793	0319h	2	R	Phase 3 active power	-16383 to 16383	kW	O		
794	031Ah	2	R	Σ Active power	-16383 to 16383	kW	O	O	O
795	031Bh	2	R	Reserved	0				
796	031Ch	2	R	Reserved	0				
797	031Dh	2	R	Reserved	0				
798	031Eh	2	R	Reserved	0				
799	031Fh	2	R	Phase 1 reactive power	-16383 to 16383	kvar	O		
800	0320h	2	R	Phase 2 reactive power	-16383 to 16383	kvar	O		
801	0321h	2	R	Phase 3 reactive power	-16383 to 16383	kvar	O		
802	0322h	2	R	Σ Reactive power	-16383 to 16383	kvar	O	O	O
803	0323h	2	R	Phase 1 apparent power	-16383 to 16383	kVA	O		
804	0324h	2	R	Phase 2 apparent power	-16383 to 16383	kVA	O		
805	0325h	2	R	Phase 3 apparent power	-16383 to 16383	kVA	O		
806	0326h	2	R	Σ Apparent power	-16383 to 16383	kVA	O		
807	0327h	2	R	Reserved	0				
808	0328h	2	R	Reserved	0				
809	0329h	2	R	Reserved	0				
810	032Ah	2	R	Reserved	0				
811	032Bh	2	R	Reserved	0				

※1 R/W : Reads and writes register.
When a data in the preset multiple registers (10H) is 8000h or 80000000h, the data of the address is not changed.

R : Reads only register.
If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
The data of negative number is expressed a two's complement.
Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

(3) Maximum Value Register

Address Dec.	Address Hex.	byte count	R/W ※1	Register Name		RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
812	032Ch	2	R	Phase 1 current	Max.	0 to 32767	A	○	○	○
813	032Dh	2	R	Phase 2 current	Max.	0 to 32767	A	○	○	○
814	032Eh	2	R	Phase 3 current	Max.	0 to 32767	A	○	○	○
815	032Fh	2	R	Neutral current	Max.	0 to 32767	A	○		
816	0330h	2	R	Average value current	Max.	0 to 32767	A	○	○	○
817	0331h	2	R	Phase 1 current demand	Max.	0 to 32767	A	○	○	○
818	0332h	2	R	Phase 2 current demand	Max.	0 to 32767	A	○	○	○
819	0333h	2	R	Phase 3 current demand	Max.	0 to 32767	A	○	○	○
820	0334h	2	R	Neutral current demand	Max.	0 to 32767	A	○		
821	0335h	2	R	Average value current demand	Max.	0 to 32767	A	○	○	○
822	0336h	2	R	Reserved		0				
823	0337h	2	R	Voltage V12	Max.	0 to 32767	V	○	○	○
824	0338h	2	R	Voltage V23	Max.	0 to 32767	V	○	○	○
825	0339h	2	R	Voltage V31	Max.	0 to 32767	V	○	○	○
826	033Ah	2	R	Average value voltage(L-L)	Max.	0 to 32767	V	○	○	○
827	033Bh	2	R	Reserved		0				
828	033Ch	2	R	Voltage V1N	Max.	0 to 32767	V	○		
829	033Dh	2	R	Voltage V2N	Max.	0 to 32767	V	○		
830	033Eh	2	R	Voltage V3N	Max.	0 to 32767	V	○		
831	033Fh	2	R	Average value voltage(L-N)	Max.	0 to 32767	V	○		
832	0340h	2	R	Reserved		0				
833	0341h	2	R	Phase 1 power factor	Max.	-500 to +1000 to 500	×0.1%	○		
834	0342h	2	R	Phase 2 power factor	Max.	-500 to +1000 to 500	×0.1%	○		
835	0343h	2	R	Phase 3 power factor	Max.	-500 to +1000 to 500	×0.1%	○		
836	0344h	2	R	Σ Power factor	Max.	-500 to +1000 to 500	×0.1%	○	○	○
837	0345h	2	R	Frequency	Max.	445 to 999	×0.1Hz	○	○	○
838	0346h	2	R	Phase 1 active power	Max.	-16383 to 16383	kW	○		
839	0347h	2	R	Phase 2 active power	Max.	-16383 to 16383	kW	○		
840	0348h	2	R	Phase 3 active power	Max.	-16383 to 16383	kW	○		
841	0349h	2	R	Σ Active power	Max.	-16383 to 16383	kW	○	○	○
842	034Ah	2	R	Reserved		0				
843	034Bh	2	R	Reserved		0				
844	034Ch	2	R	Reserved		0				
845	034Dh	2	R	Reserved		0				
846	034Eh	2	R	Phase 1 reactive power	Max.	-16383 to 16383	kvar	○		
847	034Fh	2	R	Phase 2 reactive power	Max.	-16383 to 16383	kvar	○		
848	0350h	2	R	Phase 3 reactive power	Max.	-16383 to 16383	kvar	○		
849	0351h	2	R	Σ Reactive power	Max.	-16383 to 16383	kvar	○	○	○
850	0352h	2	R	Phase 1 apparent power	Max.	-16383 to 16383	kVA	○		
851	0353h	2	R	Phase 2 apparent power	Max.	-16383 to 16383	kVA	○		
852	0354h	2	R	Phase 3 apparent power	Max.	-16383 to 16383	kVA	○		
853	0355h	2	R	Σ Apparent power	Max.	-16383 to 16383	kVA	○		
854	0356h	2	R	Reserved		0				
855	0357h	2	R	Reserved		0				
856	0358h	2	R	Reserved		0				
857	0359h	2	R	Reserved		0				

※1 R/W : Reads and writes register.
When a data in the preset multiple registers (10H) is 8000h or 80000000h, the data of the address is not changed.
R : Reads only register.
If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
The data of negative number is expressed a two's complement.
Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

(4) Minimum Value Register

Address Dec.	Address Hex.	byte count	R/W ※1	Register Name		RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
858	035Ah	2	R	Phase 1 current	Min.	0 to 32767	A	O	O	O
859	035Bh	2	R	Phase 2 current	Min.	0 to 32767	A	O	O	O
860	035Ch	2	R	Phase 3 current	Min.	0 to 32767	A	O	O	O
861	035Dh	2	R	Neutral current	Min.	0 to 32767	A	O		
862	035Eh	2	R	Average value current	Min.	0 to 32767	A	O	O	O
863	035Fh	2	R	Phase 1 current demand	Min.	0 to 32767	A	O	O	O
864	0360h	2	R	Phase 2 current demand	Min.	0 to 32767	A	O	O	O
865	0361h	2	R	Phase 3 current demand	Min.	0 to 32767	A	O	O	O
866	0362h	2	R	Neutral current demand	Min.	0 to 32767	A	O		
867	0363h	2	R	Average value curret demand	Min.	0 to 32767	A	O	O	O
868	0364h	2	R	Voltage V12	Min.	0 to 32767	V	O	O	O
869	0365h	2	R	Voltage V23	Min.	0 to 32767	V	O	O	O
870	0366h	2	R	Voltage V31	Min.	0 to 32767	V	O	O	O
871	0367h	2	R	Average value voltage(L-L)	Min.	0 to 32767	V	O	O	O
872	0368h	2	R	Voltage V1N	Min.	0 to 32767	V	O		
873	0369h	2	R	Voltage V2N	Min.	0 to 32767	V	O		
874	036Ah	2	R	Voltage V3N	Min.	0 to 32767	V	O		
875	036Bh	2	R	Average value voltage(L-N)	Min.	0 to 32767	V	O		
876	036Ch	2	R	Phase 1 power factor	Min.	-500 to +1000 to 500	×0.1%	O		
877	036Dh	2	R	Phase 2 power factor	Min.	-500 to +1000 to 500	×0.1%	O		
878	036Eh	2	R	Phase 3 power factor	Min.	-500 to +1000 to 500	×0.1%	O		
879	036Fh	2	R	Σ Power factor	Min.	-500 to +1000 to 500	×0.1%	O	O	O
880	0370h	2	R	Frequency	Min.	445 to 999	×0.1Hz	O	O	O
881	0371h	2	R	Phase 1 active power	Min.	-16383 to 16383	kW	O		
882	0372h	2	R	Phase 2 active power	Min.	-16383 to 16383	kW	O		
883	0373h	2	R	Phase 3 active power	Min.	-16383 to 16383	kW	O		
884	0374h	2	R	Σ Active power	Min.	-16383 to 16383	kW	O	O	O
885	0375h	2	R	Reserved		0				
886	0376h	2	R	Reserved		0				
887	0377h	2	R	Reserved		0				
888	0378h	2	R	Reserved		0				
889	0379h	2	R	Phase 1 reactive power	Min.	-16383 to 16383	kvar	O		
890	037Ah	2	R	Phase 2 reactive power	Min.	-16383 to 16383	kvar	O		
891	037Bh	2	R	Phase 3 reactive power	Min.	-16383 to 16383	kvar	O		
892	037Ch	2	R	Σ Reactive power	Min.	-16383 to 16383	kvar	O	O	O
893	037Dh	2	R	Phase 1 apparent power	Min.	-16383 to 16383	kVA	O		
894	037Eh	2	R	Phase 2 apparent power	Min.	-16383 to 16383	kVA	O		
895	037Fh	2	R	Phase 3 apparent power	Min.	-16383 to 16383	kVA	O		
896	0380h	2	R	Σ Apparent power	Min.	-16383 to 16383	kVA	O		
897	0381h	2	R	Reserved		0				
898	0382h	2	R	Reserved		0				

※1 R/W : Reads and writes register.
   When a data in the preset multiple registers (10H) is 8000h or 80000000h, the data of the address is not changed.
   R : Reads only register.
   If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
   The data of negative number is expressed a two's complement.
   Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

(5) Counting of Energy Register

Address Dec.	Address Hex.	byte count	R/W ※1	Register Name		RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
1280	0500h	2	R	Active energy	import	less than 1000	kWh	O	O	O
1281	0501h	2	R			1000 or more		O	O	O
1282	0502h	2	R	Active energy	export	less than 1000	kWh	O	O	O
1283	0503h	2	R			1000 or more		O	O	O
1284	0504h	2	R	Reactive energy	import LAG	less than 1000	kvarh	O	O	O
1285	0505h	2	R			1000 or more		O	O	O
1286	0506h	2	R	Reactive energy	export LAG	less than 1000	kvarh	O	O	O
1287	0507h	2	R			1000 or more		O	O	O
1288	0508h	2	R	Reactive energy	import LEAD	less than 1000	kvarh	O	O	O
1289	0509h	2	R			1000 or more		O	O	O
1290	050Ah	2	R	Reactive energy	export LEAD	less than 1000	kvarh	O	O	O
1291	050Bh	2	R			1000 or more		O	O	O
1292	050Ch	2	R	Extended active energy	import	less than 1000	kWh	O	O	O
1293	050Dh	2	R			1000 or more		O	O	O
1294	050Eh	2	R	Extended active energy	export	less than 1000	kWh	O	O	O
1295	050Fh	2	R			1000 or more		O	O	O
1296	0510h	2	R	Extended reactive energy	import LAG	less than 1000	kvarh	O	O	O
1297	0511h	2	R			1000 or more		O	O	O
1298	0512h	2	R	Extended reactive energy	export LAG	less than 1000	kvarh	O	O	O
1299	0513h	2	R			1000 or more		O	O	O
1300	0514h	2	R	Extended reactive energy	import LEAD	less than 1000	kvarh	O	O	O
1301	0515h	2	R			1000 or more		O	O	O
1302	0516h	2	R	Extended reactive energy	export LEAD	less than 1000	kvarh	O	O	O
1303	0517h	2	R			1000 or more		O	O	O
1304	0518h	4	R/W	Active energy ※3	import	0 to 999999	kWh	O	O	O
1306	051Ah	4	R/W	Active energy ※3	export	0 to 999999	kWh	O	O	O
1308	051Ch	4	R/W	Reactive energy ※3	import LAG	0 to 999999	kvarh	O	O	O
1310	051Eh	4	R/W	Reactive energy ※3	export LAG	0 to 999999	kvarh	O	O	O
1312	0520h	4	R/W	Reactive energy ※3	import LEAD	0 to 999999	kvarh	O	O	O
1314	0522h	4	R/W	Reactive energy ※3	export LEAD	0 to 999999	kvarh	O	O	O
1316	0524h	4	R	Extended active energy ※3	import	0 to 999999	kWh	O	O	O
1318	0526h	4	R	Extended active energy ※3	export	0 to 999999	kWh	O	O	O
1320	0528h	4	R	Extended reactive energy ※3	import LAG	0 to 999999	kvarh	O	O	O
1322	052Ah	4	R	Extended reactive energy ※3	export LAG	0 to 999999	kvarh	O	O	O
1324	052Ch	4	R	Extended reactive energy ※3	import LEAD	0 to 999999	kvarh	O	O	O
1326	052Eh	4	R	Extended reactive energy ※3	export LEAD	0 to 999999	kvarh	O	O	O

※1 R/W : Reads and writes register.
     When a data in the preset multiple registers (10H) is 8000h or 80000000h, the data of the address is not changed.
    R   : Reads only register.
     If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
    The data of negative number is expressed a two's complement.
    Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

※3 Addresses from 0518h to 0522h can be accessed only from the even number address.
    If the byte count of start address 0518h and 051Ah etc. is 2, 3, 5 or 6-byte, the exception code 02h is returned.

(6) Alarm Value Register

Address Dec.	Address Hex.	byte count	R/W ※1	Register Name	RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
1536	0600h	4	R/W	Current demand upper limit	0 to 4000000	×0.01A	O	O	O
1538	0602h	4	R/W	Voltage(L-N) upper limit	0 to 75000000	×0.01V	O		
1540	0604h	4	R/W	Current upper limit	0 to 4000000	×0.01A	O	O	O
1542	0606h	4	R/W	Power factor upper limit	-50 to +1000 to 50	×0.1%	O	O	O
1544	0608h	4	R/W	Frequency upper limit	445 to 665	×0.1Hz	O	O	O
1546	060Ah	4	R/W	Harmonics current upper limit	0 to 1000	×0.1%	O	O	O
1548	060Ch	4	R/W	THD voltage upper limit	0 to 200	×0.1%	O	O	O
1550	060Eh	4	R	Reserved	0				
1552	0610h	4	R/W	Active power upper limit ※4	-1638300000 to 1638300000	W	O	O	O
1554	0612h	4	R/W	Reactive power upper limit ※4	-1638300000 to 1638300000	var	O	O	O
1556	0614h	4	R/W	Current demand lower limit	0 to 4000000	×0.01A	O	O	O
1558	0616h	4	R/W	Voltage(L-N) lower limit	0 to 75000000	×0.01V	O		
1560	0618h	4	R/W	Current lower limit	0 to 4000000	×0.01A	O	O	O
1562	061Ah	4	R/W	Power factor lower limit	-50 to +1000 to 50	×0.1%	O	O	O
1564	061Ch	4	R/W	Frequency lower limit	445 to 665	×0.1Hz	O	O	O
1566	061Eh	4	R	Reserved	0				
1568	0620h	4	R/W	Active power lower limit ※4	-1638300000 to 1638300000	W	O	O	O
1570	0622h	4	R/W	Reactive power lower limit ※4	-1638300000 to 1638300000	var	O	O	O
1572	0624h	4	R/W	Neutral current demand lower limit	0 to 4000000	×0.01A	O		
1574	0626h	4	R/W	Neutral current lower limit	0 to 4000000	×0.01A	O		
1576	0628h	4	R/W	Neutral harmonics current lower limit	0 to 1000	×0.1%	O		
1578	062Ah	4	R/W	Voltage(L-L) upper limit	0 to 75000000	×0.01V	O	O	O
1580	062Ch	4	R/W	Voltage(L-L) lower limit	0 to 75000000	×0.01V	O	O	O

※1　R/W : Reads and writes register.
　　　　When a data in the preset multiple registers (10H) is 8000h or 80000000h, the data of the address is not changed.
　　　R　　: Reads only register.
　　　　If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2　The data of the address which is not measured in the table is returned 0.
　　　The data of negative number is expressed a two's complement.
　　　Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

※3　Access to address from 0600h to 0622h needs a setup of the basic device.
　　　If it is not set, exception code is returned.

※4　As a read data of upper (lower) limit value at W and var, a maximum (minimum) value becomes ± 1638300000W(var).

(7) Harmonics Value Register

Address Dec.	Address Hex.	byte count	R/W ※1	Register Name		RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
1792	0700h	2	R	Harmonics value V1N	Total	0 to 32767	V	O		
1793	0701h	2	R	Harmonics value V2N	Total	0 to 32767	V	O		
1794	0702h	2	R	Harmonics value V3N	Total	0 to 32767	V	O		
1795	0703h	2	R	Harmonics value V1N	1st	0 to 32767	V	O		
1796	0704h	2	R	Harmonics value V2N	1st	0 to 32767	V	O		
1797	0705h	2	R	Harmonics value V3N	1st	0 to 32767	V	O		
1798	0706h	2	R	Harmonics value V1N	3rd	0 to 32767	V	O		
1799	0707h	2	R	Harmonics value V2N	3rd	0 to 32767	V	O		
1800	0708h	2	R	Harmonics value V3N	3rd	0 to 32767	V	O		
1801	0709h	2	R	Harmonics value V1N	5th	0 to 32767	V	O		
1802	070Ah	2	R	Harmonics value V2N	5th	0 to 32767	V	O		
1803	070Bh	2	R	Harmonics value V3N	5th	0 to 32767	V	O		
1804	070Ch	2	R	Harmonics value V1N	7th	0 to 32767	V	O		
1805	070Dh	2	R	Harmonics value V2N	7th	0 to 32767	V	O		
1806	070Eh	2	R	Harmonics value V3N	7th	0 to 32767	V	O		
1807	070Fh	2	R	Harmonics value V1N	9th	0 to 32767	V	O		
1808	0710h	2	R	Harmonics value V2N	9th	0 to 32767	V	O		
1809	0711h	2	R	Harmonics value V3N	9th	0 to 32767	V	O		
1810	0712h	2	R	Harmonics value V1N	11th	0 to 32767	V	O		
1811	0713h	2	R	Harmonics value V2N	11th	0 to 32767	V	O		
1812	0714h	2	R	Harmonics value V3N	11th	0 to 32767	V	O		
1813	0715h	2	R	Harmonics value V1N	13th	0 to 32767	V	O		
1814	0716h	2	R	Harmonics value V2N	13th	0 to 32767	V	O		
1815	0717h	2	R	Harmonics value V3N	13th	0 to 32767	V	O		
2048	0800h	2	R	Harmonics value V12	Total	0 to 32767	V		O	O
2049	0801h	2	R	Harmonics value V23	Total	0 to 32767	V		O	O
2050	0802h	2	R	Reserved		0				
2051	0803h	2	R	Harmonics value V12	1st	0 to 32767	V		O	O
2052	0804h	2	R	Harmonics value V23	1st	0 to 32767	V		O	O
2053	0805h	2	R	Reserved		0				
2054	0806h	2	R	Harmonics value V12	3rd	0 to 32767	V		O	O
2055	0807h	2	R	Harmonics value V23	3rd	0 to 32767	V		O	O
2056	0808h	2	R	Reserved		0				
2057	0809h	2	R	Harmonics value V12	5th	0 to 32767	V		O	O
2058	080Ah	2	R	Harmonics value V23	5th	0 to 32767	V		O	O
2059	080Bh	2	R	Reserved		0				
2060	080Ch	2	R	Harmonics value V12	7th	0 to 32767	V		O	O
2061	080Dh	2	R	Harmonics value V23	7th	0 to 32767	V		O	O
2062	080Eh	2	R	Reserved		0				
2063	080Fh	2	R	Harmonics value V12	9th	0 to 32767	V		O	O
2064	0810h	2	R	Harmonics value V23	9th	0 to 32767	V		O	O
2065	0811h	2	R	Reserved		0				
2066	0812h	2	R	Harmonics value V12	11th	0 to 32767	V		O	O
2067	0813h	2	R	Harmonics value V23	11th	0 to 32767	V		O	O
2068	0814h	2	R	Reserved		0				
2069	0815h	2	R	Harmonics value V12	13th	0 to 32767	V		O	O
2070	0816h	2	R	Harmonics value V23	13th	0 to 32767	V		O	O
2071	0817h	2	R	Reserved		0				

※1 R/W : Reads and writes register.
When a data in the preset multiple registers (10H) is 8000h or 80000000h, the data of the address is not changed.
R : Reads only register.
If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
The data of negative number is expressed a two's complement.
Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

Harmonics Value Register

Address		byte count	R/W ※1	Register Name		RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
Dec.	Hex.									
2304	0900h	2	R	Harmonics value I1	Total	0 to 32767	A	O	O	O
2305	0901h	2	R	Harmonics value I2	Total	0 to 32767	A	O	O	O
2306	0902h	2	R	Harmonics value I3	Total	0 to 32767	A	O	O	O
2307	0903h	2	R	Harmonics value IN	Total	0 to 32767	A	O		
2308	0904h	2	R	Harmonics value I1	1st	0 to 32767	A	O	O	O
2309	0905h	2	R	Harmonics value I2	1st	0 to 32767	A	O	O	O
2310	0906h	2	R	Harmonics value I3	1st	0 to 32767	A	O	O	O
2311	0907h	2	R	Harmonics value IN	1st	0 to 32767	A	O		
2312	0908h	2	R	Harmonics value I1	3rd	0 to 32767	A	O	O	O
2313	0909h	2	R	Harmonics value I2	3rd	0 to 32767	A	O	O	O
2314	090Ah	2	R	Harmonics value I3	3rd	0 to 32767	A	O	O	O
2315	090Bh	2	R	Harmonics value IN	3rd	0 to 32767	A	O		
2316	090Ch	2	R	Harmonics value I1	5th	0 to 32767	A	O	O	O
2317	090Dh	2	R	Harmonics value I2	5th	0 to 32767	A	O	O	O
2318	090Eh	2	R	Harmonics value I3	5th	0 to 32767	A	O	O	O
2319	090Fh	2	R	Harmonics value IN	5th	0 to 32767	A	O		
2320	0910h	2	R	Harmonics value I1	7th	0 to 32767	A	O	O	O
2321	0911h	2	R	Harmonics value I2	7th	0 to 32767	A	O	O	O
2322	0912h	2	R	Harmonics value I3	7th	0 to 32767	A	O	O	O
2323	0913h	2	R	Harmonics value IN	7th	0 to 32767	A	O		
2324	0914h	2	R	Harmonics value I1	9th	0 to 32767	A	O	O	O
2325	0915h	2	R	Harmonics value I2	9th	0 to 32767	A	O	O	O
2326	0916h	2	R	Harmonics value I3	9th	0 to 32767	A	O	O	O
2327	0917h	2	R	Harmonics value IN	9th	0 to 32767	A	O		
2328	0918h	2	R	Harmonics value I1	11th	0 to 32767	A	O	O	O
2329	0919h	2	R	Harmonics value I2	11th	0 to 32767	A	O	O	O
2330	091Ah	2	R	Harmonics value I3	11th	0 to 32767	A	O	O	O
2331	091Bh	2	R	Harmonics value IN	11th	0 to 32767	A	O		
2332	091Ch	2	R	Harmonics value I1	13th	0 to 32767	A	O	O	O
2333	091Dh	2	R	Harmonics value I2	13th	0 to 32767	A	O	O	O
2334	091Eh	2	R	Harmonics value I3	13th	0 to 32767	A	O	O	O
2335	091Fh	2	R	Harmonics value IN	13th	0 to 32767	A	O		
2560	0A00h	2	R	THD V1N	Total	0 to 1000	×0.1%	O		
2561	0A01h	2	R	THD V2N	Total	0 to 1000	×0.1%	O		
2562	0A02h	2	R	THD V3N	Total	0 to 1000	×0.1%	O		
2563	0A03h	2	R	Harmonics ratio V1N	3rd	0 to 1000	×0.1%	O		
2564	0A04h	2	R	Harmonics ratio V2N	3rd	0 to 1000	×0.1%	O		
2565	0A05h	2	R	Harmonics ratio V3N	3rd	0 to 1000	×0.1%	O		
2566	0A06h	2	R	Harmonics ratio V1N	5th	0 to 1000	×0.1%	O		
2567	0A07h	2	R	Harmonics ratio V2N	5th	0 to 1000	×0.1%	O		
2568	0A08h	2	R	Harmonics ratio V3N	5th	0 to 1000	×0.1%	O		
2569	0A09h	2	R	Harmonics ratio V1N	7th	0 to 1000	×0.1%	O		
2570	0A0Ah	2	R	Harmonics ratio V2N	7th	0 to 1000	×0.1%	O		
2571	0A0Bh	2	R	Harmonics ratio V3N	7th	0 to 1000	×0.1%	O		
2572	0A0Ch	2	R	Harmonics ratio V1N	9th	0 to 1000	×0.1%	O		
2573	0A0Dh	2	R	Harmonics ratio V2N	9th	0 to 1000	×0.1%	O		
2574	0A0Eh	2	R	Harmonics ratio V3N	9th	0 to 1000	×0.1%	O		
2575	0A0Fh	2	R	Harmonics ratio V1N	11th	0 to 1000	×0.1%	O		
2576	0A10h	2	R	Harmonics ratio V2N	11th	0 to 1000	×0.1%	O		
2577	0A11h	2	R	Harmonics ratio V3N	11th	0 to 1000	×0.1%	O		
2578	0A12h	2	R	Harmonics ratio V1N	13th	0 to 1000	×0.1%	O		
2579	0A13h	2	R	Harmonics ratio V2N	13th	0 to 1000	×0.1%	O		
2580	0A14h	2	R	Harmonics ratio V3N	13th	0 to 1000	×0.1%	O		

※1 R   : Reads only register.
        If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
      The data of negative number is expressed a two's complement.
      Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

Harmonics Value Register

Address		byte count	R/W ※1	Register Name		RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
Dec.	Hex.									
2816	0B00h	2	R	THD V12	Total	0 to 1000	×0.1%		O	O
2817	0B01h	2	R	THD V23	Total	0 to 1000	×0.1%		O	O
2818	0B02h	2	R	Reserved		0				
2819	0B03h	2	R	Harmonics ratio V12	3rd	0 to 1000	×0.1%		O	O
2820	0B04h	2	R	Harmonics ratio V23	3rd	0 to 1000	×0.1%		O	O
2821	0B05h	2	R	Reserved		0				
2822	0B06h	2	R	Harmonics ratio V12	5th	0 to 1000	×0.1%		O	O
2823	0B07h	2	R	Harmonics ratio V23	5th	0 to 1000	×0.1%		O	O
2824	0B08h	2	R	Reserved		0				
2825	0B09h	2	R	Harmonics ratio V12	7th	0 to 1000	×0.1%		O	O
2826	0B0Ah	2	R	Harmonics ratio V23	7th	0 to 1000	×0.1%		O	O
2827	0B0Bh	2	R	Reserved		0				
2828	0B0Ch	2	R	Harmonics ratio V12	9th	0 to 1000	×0.1%		O	O
2829	0B0Dh	2	R	Harmonics ratio V23	9th	0 to 1000	×0.1%		O	O
2830	0B0Eh	2	R	Reserved		0				
2831	0B0Fh	2	R	Harmonics ratio V12	11th	0 to 1000	×0.1%		O	O
2832	0B10h	2	R	Harmonics ratio V23	11th	0 to 1000	×0.1%		O	O
2833	0B11h	2	R	Reserved		0				
2834	0B12h	2	R	Harmonics ratio V12	13th	0 to 1000	×0.1%		O	O
2835	0B13h	2	R	Harmonics ratio V23	13th	0 to 1000	×0.1%		O	O
2836	0B14h	2	R	Reserved		0				
3072	0C00h	2	R	THD I1	Total	0 to 1000	×0.1%	O	O	O
3073	0C01h	2	R	THD I2	Total	0 to 1000	×0.1%	O	O	O
3074	0C02h	2	R	THD I3	Total	0 to 1000	×0.1%	O	O	O
3075	0C03h	2	R	THD IN	Total	0 to 1000	×0.1%	O		
3076	0C04h	2	R	Harmonics ratio I1	3rd	0 to 1000	×0.1%	O	O	O
3077	0C05h	2	R	Harmonics ratio I2	3rd	0 to 1000	×0.1%	O	O	O
3078	0C06h	2	R	Harmonics ratio I3	3rd	0 to 1000	×0.1%	O	O	O
3079	0C07h	2	R	Harmonics ratio IN	3rd	0 to 1000	×0.1%	O		
3080	0C08h	2	R	Harmonics ratio I1	5th	0 to 1000	×0.1%	O	O	O
3081	0C09h	2	R	Harmonics ratio I2	5th	0 to 1000	×0.1%	O	O	O
3082	0C0Ah	2	R	Harmonics ratio I3	5th	0 to 1000	×0.1%	O	O	O
3083	0C0Bh	2	R	Harmonics ratio IN	5th	0 to 1000	×0.1%	O		
3084	0C0Ch	2	R	Harmonics ratio I1	7th	0 to 1000	×0.1%	O	O	O
3085	0C0Dh	2	R	Harmonics ratio I2	7th	0 to 1000	×0.1%	O	O	O
3086	0C0Eh	2	R	Harmonics ratio I3	7th	0 to 1000	×0.1%	O	O	O
3087	0C0Fh	2	R	Harmonics ratio IN	7th	0 to 1000	×0.1%	O		
3088	0C10h	2	R	Harmonics ratio I1	9th	0 to 1000	×0.1%	O	O	O
3089	0C11h	2	R	Harmonics ratio I2	9th	0 to 1000	×0.1%	O	O	O
3090	0C12h	2	R	Harmonics ratio I3	9th	0 to 1000	×0.1%	O	O	O
3091	0C13h	2	R	Harmonics ratio IN	9th	0 to 1000	×0.1%	O		
3092	0C14h	2	R	Harmonics ratio I1	11th	0 to 1000	×0.1%	O	O	O
3093	0C15h	2	R	Harmonics ratio I2	11th	0 to 1000	×0.1%	O	O	O
3094	0C16h	2	R	Harmonics ratio I3	11th	0 to 1000	×0.1%	O	O	O
3095	0C17h	2	R	Harmonics ratio IN	11th	0 to 1000	×0.1%	O		
3096	0C18h	2	R	Harmonics ratio I1	13th	0 to 1000	×0.1%	O	O	O
3097	0C19h	2	R	Harmonics ratio I2	13th	0 to 1000	×0.1%	O	O	O
3098	0C1Ah	2	R	Harmonics ratio I3	13th	0 to 1000	×0.1%	O	O	O
3099	0C1Bh	2	R	Harmonics ratio IN	13th	0 to 1000	×0.1%	O		

※1 R   : Reads only register.
          If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
      The data of negative number is expressed a two's complement.
      Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

(8) Harmonics Maximum Value Register

Address Dec.	Address Hex.	byte count	R/W ※1	Register Name			RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
3328	0D00h	2	R	Reserved			0				
3329	0D01h	2	R	Harmonics value V(L-N)	1st	Max.	0 to 32767	V	○		
3330	0D02h	2	R	Reserved			0				
3331	0D03h	2	R	Reserved			0				
3332	0D04h	2	R	Reserved			0				
3333	0D05h	2	R	Reserved			0				
3334	0D06h	2	R	Reserved			0				
3335	0D07h	2	R	Reserved			0				
3584	0E00h	2	R	Reserved			0				
3585	0E01h	2	R	Harmonics value V(L-L)	1st	Max.	0 to 32767	V		○	○
3586	0E02h	2	R	Reserved			0				
3587	0E03h	2	R	Reserved			0				
3588	0E04h	2	R	Reserved			0				
3589	0E05h	2	R	Reserved			0				
3590	0E06h	2	R	Reserved			0				
3591	0E07h	2	R	Reserved			0				
3840	0F00h	2	R	Harmonics value current	Total	Max.	0 to 32767	A	○	○	○
3841	0F01h	2	R	Harmonics value current	1st	Max.	0 to 32767	A	○	○	○
3842	0F02h	2	R	Harmonics value current	3rd	Max.	0 to 32767	A	○	○	○
3843	0F03h	2	R	Harmonics value current	5th	Max.	0 to 32767	A	○	○	○
3844	0F04h	2	R	Harmonics value current	7th	Max.	0 to 32767	A	○	○	○
3845	0F05h	2	R	Harmonics value current	9th	Max.	0 to 32767	A	○	○	○
3846	0F06h	2	R	Harmonics value current	11th	Max.	0 to 32767	A	○	○	○
3847	0F07h	2	R	Harmonics value current	13th	Max.	0 to 32767	A	○	○	○
3848	0F08h	2	R	Reserved			0				
3849	0F09h	2	R	Reserved			0				
3850	0F0Ah	2	R	Reserved			0				
3851	0F0Bh	2	R	Reserved			0				
3852	0F0Ch	2	R	Reserved			0				
3853	0F0Dh	2	R	Reserved			0				
3854	0F0Eh	2	R	Reserved			0				
3855	0F0Fh	2	R	Harmonics value neutral current	Total	Max.	0 to 32767	A	○		
3856	0F10h	2	R	Reserved			0				
3857	0F11h	2	R	Reserved			0				
3858	0F12h	2	R	Reserved			0				
3859	0F13h	2	R	Harmonics value neutral current	1st	Max.	0 to 32767	A	○		
3860	0F14h	2	R	Reserved			0				
3861	0F15h	2	R	Reserved			0				
3862	0F16h	2	R	Reserved			0				
3863	0F17h	2	R	Harmonics value neutral current	3rd	Max.	0 to 32767	A	○		
3864	0F18h	2	R	Reserved			0				
3865	0F19h	2	R	Reserved			0				
3866	0F1Ah	2	R	Reserved			0				
3867	0F1Bh	2	R	Harmonics value neutral current	5th	Max.	0 to 32767	A	○		
3868	0F1Ch	2	R	Reserved			0				
3869	0F1Dh	2	R	Reserved			0				
3870	0F1Eh	2	R	Reserved			0				
3871	0F1Fh	2	R	Harmonics value neutral current	7th	Max.	0 to 32767	A	○		
3872	0F20h	2	R	Reserved			0				
3873	0F21h	2	R	Reserved			0				
3874	0F22h	2	R	Reserved			0				
3875	0F23h	2	R	Harmonics value neutral current	9th	Max.	0 to 32767	A	○		
3876	0F24h	2	R	Reserved			0				
3877	0F25h	2	R	Reserved			0				
3878	0F26h	2	R	Reserved			0				
3879	0F27h	2	R	Harmonics value neutral current	11th	Max.	0 to 32767	A	○		
3880	0F28h	2	R	Reserved			0				
3881	0F29h	2	R	Reserved			0				
3882	0F2Ah	2	R	Reserved			0				
3883	0F2Bh	2	R	Harmonics value neutral current	13th	Max.	0 to 32767	A	○		

Harmonics Maximum Value Register

Address		byte count	R/W ※1	Register Name			RANGE ※2	Unit	3P4W	3P3W _2CT	3P3W _3CT
Dec.	Hex.										
4096	1000h	2	R	THD voltage	Total	Max.	0 to 1000	×0.1%	O		
4097	1001h	2	R	Harmonics ratio voltage(L-N)	3rd	Max.	0 to 1000	×0.1%	O		
4098	1002h	2	R	Harmonics ratio voltage(L-N)	5th	Max.	0 to 1000	×0.1%	O		
4099	1003h	2	R	Harmonics ratio voltage(L-N)	7th	Max.	0 to 1000	×0.1%	O		
4100	1004h	2	R	Harmonics ratio voltage(L-N)	9th	Max.	0 to 1000	×0.1%	O		
4101	1005h	2	R	Harmonics ratio voltage(L-N)	11th	Max.	0 to 1000	×0.1%	O		
4102	1006h	2	R	Harmonics ratio voltage(L-N)	13th	Max.	0 to 1000	×0.1%	O		
4352	1100h	2	R	THD voltage	Total	Max.	0 to 1000	×0.1%		O	O
4353	1101h	2	R	Harmonics ratio voltage(L-L)	3rd	Max.	0 to 1000	×0.1%		O	O
4354	1102h	2	R	Harmonics ratio voltage(L-L)	5th	Max.	0 to 1000	×0.1%		O	O
4355	1103h	2	R	Harmonics ratio voltage(L-L)	7th	Max.	0 to 1000	×0.1%		O	O
4356	1104h	2	R	Harmonics ratio voltage(L-L)	9th	Max.	0 to 1000	×0.1%		O	O
4357	1105h	2	R	Harmonics ratio voltage(L-L)	11th	Max.	0 to 1000	×0.1%		O	O
4358	1106h	2	R	Harmonics ratio voltage(L-L)	13th	Max.	0 to 1000	×0.1%		O	O
4608	1200h	2	R	Reserved			0				
4609	1201h	2	R	Reserved			0				
4610	1202h	2	R	Reserved			0				
4611	1203h	2	R	Reserved			0				
4612	1204h	2	R	Reserved			0				
4613	1205h	2	R	Reserved			0				
4614	1206h	2	R	Reserved			0				

※1 R   : Reads only register.
         If it receives the preset multiple registers code for this register, exception code 02h is returned.

※2 The data of the address which is not measured in the table is returned 0.
     The data of negative number is expressed a two's complement.
     Reviced data are convertible for measured value by the multiplying factor. (Refer to 7 .2)

8. Test Fumction Mode

ME96NSR has the test function mode which the fixed values are replied if there is no input. It is effective to check the communication to PLC.

8 .1 How to Test

To test, it is necessary to operate the basic device.
Operate as follows.

①At the state of power failure, turn on the power supply while pressing the DISPLAY of basic device.
②After display on the right is shown, operate the normal communication.
③Data shown in the next section is replied.

When the test is finished, turn off the power supply.
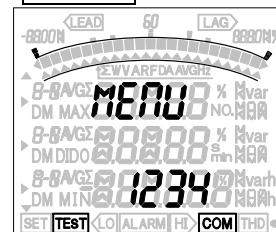
8 .2 Reply Data

The reply data at test function mode is shown in next page and on.
The reply data takes the value of primary side, but the data of table 8.1 describes the secondary side.
It is necessary to convert to the value of primary side using the VT ratio and CT ratio.

(Example)At three phase 3-wire,   VT: 6600V/110V,   CT: 100A/5A
・Phase 1 current (Inst.)   =   reply data(secondary side)×CT ratio.
                                  =   4.11A × 100A/5A = 82.2A
・1-2 voltage (Inst.)   =   reply data(secondary side)×VT ratio.
                                  =   101.1V × 6600V/110V = 6066V
・Total active power (Inst.)   =   reply data(secondary side)×VT ratio×CT ratio.
                                  =   1041W × 6600V/110V × 100A/5A = 1249.2kW

Table 8.1   Reply Data

(1) Setup Register

Address		byte count	R/W	Register Name	RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.						3P4W	3P3W _2CT	3P3W _3CT
512	0200h	2	R/W	Phase Wiring	Refer to 7 .1(1)		-	-	-
513	0201h	4	R/W	Primary voltage (L-L)	Refer to 7 .1(2)	V	-	-	-
515	0203h	4	R/W	Primary voltage (L-N)	Refer to 7 .1(3)	×0.1V	-	-	-
517	0205h	4	R/W	Secondary voltage (L-N)	Refer to 7 .1(4)	×0.1V	-	-	-
519	0207h	4	R/W	Primary current	Refer to 7 .1(5)	×0.1A	-	-	-
521	0209h	2	R	Reserved	0		-	-	-
522	020Ah	2	R/W	Time constant for DA	Refer to 7 .1(6)	s	-	-	-
523	020Bh	2	R/W	16 bits Set/Reset register	Refer to 7 .1(7)		Note3	Note3	Note3
524	020Ch	2	R	16 bits monitor 1	Refer to 7 .1(8)		Note1	Note1	Note1
594	0252h	2	R	16 bits monitor 2	Refer to 7 .1(9)		Note2	Note2	Note2

Note1: b5 and b8 become ON(1). And, b0 to b4 of digital inputs are reflected to the present state.

Note2: b7, b12 to b15 become ON(1).

Note3:When you read this register, b4,b5 of digital output are reflected to the present state of contact.
（Contact=open ⇒ "0"　Contact=close ⇒ "1"）

(2) Instantaneous Value Register

Address		byte count	R/W	Register Name	RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.						3P4W	3P3W 2CT	3P3W 3CT
768	0300h	2	R	Phase 1 current	0 to 32767	A	4.11A	4.11A	4.11A
769	0301h	2	R	Phase 2 current	0 to 32767	A	4.21A	4.51A	4.21A
770	0302h	2	R	Phase 3 current	0 to 32767	A	4.61A	4.61A	4.61A
771	0303h	2	R	Neutral current	0 to 32767	A	4.51A	-	-
772	0304h	2	R	Average value current	0 to 32767	A	4.31A	4.41A	4.31A
773	0305h	2	R	Phase 1 current demand	0 to 32767	A	4.11A	4.11A	4.11A
774	0306h	2	R	Phase 2 current demand	0 to 32767	A	4.21A	4.51A	4.21A
775	0307h	2	R	Phase 3 current demand	0 to 32767	A	4.61A	4.61A	4.61A
776	0308h	2	R	Neutral current demand	0 to 32767	A	4.51A	-	-
777	0309h	2	R	Average value current demand	0 to 32767	A	4.31A	4.41A	4.31A
778	030Ah	2	R	Voltage V12	0 to 32767	V	171.1V	101.1V	101.1V
779	030Bh	2	R	Voltage V23	0 to 32767	V	172.1V	106.1V	106.1V
780	030Ch	2	R	Voltage V31	0 to 32767	V	176.1V	176.1V	176.1V
781	030Dh	2	R	Average value voltage (L-L)	0 to 32767	V	173.1V	127.8V	127.8V
782	030Eh	2	R	Voltage V1N	0 to 32767	V	101.1V	-	-
783	030Fh	2	R	Voltage V2N	0 to 32767	V	102.1V	-	-
784	0310h	2	R	Voltage V3N	0 to 32767	V	106.1V	-	-
785	0311h	2	R	Average value voltage (L-N)	0 to 32767	V	103.1V	-	-
786	0312h	2	R	Phase 1 power factor	-500 to +1000 to 500	×0.1%	81.1%	-	-
787	0313h	2	R	Phase 2 power factor	-500 to +1000 to 500	×0.1%	82.1%	-	-
788	0314h	2	R	Phase 3 power factor	-500 to +1000 to 500	×0.1%	83.1%	-	-
789	0315h	2	R	Σ Power factor	-500 to +1000 to 500	×0.1%	84.1%	84.1%	84.1%
790	0316h	2	R	Frequency	445 to 999	×0.1Hz	50.0Hz	50.0Hz	50.0Hz
791	0317h	2	R	Phase 1 active power	-16383 to 16383	kW	1011W	-	-
792	0318h	2	R	Phase 2 active power	-16383 to 16383	kW	1021W	-	-
793	0319h	2	R	Phase 3 active power	-16383 to 16383	kW	1031W	-	-
794	031Ah	2	R	Σ Active power	-16383 to 16383	kW	1041W	1041W	1041W
795	031Bh	2	R	Reserved	0		-	-	-
796	031Ch	2	R	Reserved	0		-	-	-
797	031Dh	2	R	Reserved	0		-	-	-
798	031Eh	2	R	Reserved	0		-	-	-
799	031Fh	2	R	Phase 1 reactive power	-16383 to 16383	kvar	711var	-	-
800	0320h	2	R	Phase 2 reactive power	-16383 to 16383	kvar	721var	-	-
801	0321h	2	R	Phase 3 reactive power	-16383 to 16383	kvar	731var	-	-
802	0322h	2	R	Σ Reactive power	-16383 to 16383	kvar	741var	741var	741var
803	0323h	2	R	Phase 1 apparent power	-16383 to 16383	kVA	1211VA	-	-
804	0324h	2	R	Phase 2 apparent power	-16383 to 16383	kVA	1221VA	-	-
805	0325h	2	R	Phase 3 apparent power	-16383 to 16383	kVA	1231VA	-	-
806	0326h	2	R	Σ Apparent power	-16383 to 16383	kVA	1241VA	-	-
807	0327h	2	R	Reserved	0		-	-	-
808	0328h	2	R	Reserved	0		-	-	-
809	0329h	2	R	Reserved	0		-	-	-
810	032Ah	2	R	Reserved	0		-	-	-
811	032Bh	2	R	Reserved	0		-	-	-

(3) Maximum Value Register

Address		byte count	R/W	Register Name		RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.							3P4W	3P3W 2CT	3P3W 3CT
812	032Ch	2	R	Phase 1 current	Max.	0 to 32767	A	4.12A	4.12A	4.12A
813	032Dh	2	R	Phase 2 current	Max.	0 to 32767	A	4.22A	4.52A	4.22A
814	032Eh	2	R	Phase 3 current	Max.	0 to 32767	A	4.62A	4.62A	4.62A
815	032Fh	2	R	Neutral current	Max.	0 to 32767	A	4.52A		
816	0330h	2	R	Average value current	Max.	0 to 32767	A	4.32A	4.42A	4.32A
817	0331h	2	R	Phase 1 current demand	Max.	0 to 32767	A	4.12A	4.12A	4.12A
818	0332h	2	R	Phase 2 current demand	Max.	0 to 32767	A	4.22A	4.52A	4.22A
819	0333h	2	R	Phase 3 current demand	Max.	0 to 32767	A	4.62A	4.62A	4.62A
820	0334h	2	R	Neutral current demand	Max.	0 to 32767	A	4.52A	-	-
821	0335h	2	R	Average value current demand	Max.	0 to 32767	A	4.32A	4.42A	4.32A
822	0336h	2	R	Reserved		0		-	-	-
823	0337h	2	R	Voltage V12	Max.	0 to 32767	V	171.2V	101.2V	101.2V
824	0338h	2	R	Voltage V23	Max.	0 to 32767	V	172.2V	106.2V	106.2V
825	0339h	2	R	Voltage V31	Max.	0 to 32767	V	176.2V	176.2V	176.2V
826	033Ah	2	R	Average value voltage(L-L)	Max.	0 to 32767	V	173.2V	127.9V	127.9V
827	033Bh	2	R	Reserved		0		-	-	-
828	033Ch	2	R	Voltage V1N	Max.	0 to 32767	V	101.2V	-	-
829	033Dh	2	R	Voltage V2N	Max.	0 to 32767	V	102.2V	-	-
830	033Eh	2	R	Voltage V3N	Max.	0 to 32767	V	106.2V	-	-
831	033Fh	2	R	Average value voltage(L-N)	Max.	0 to 32767	V	103.2V	-	-
832	0340h	2	R	Reserved		0		-	-	-
833	0341h	2	R	Phase 1 power factor	Max.	-500 to +1000 to 500	×0.1%	81.0%	-	-
834	0342h	2	R	Phase 2 power factor	Max.	-500 to +1000 to 500	×0.1%	81.9%	-	-
835	0343h	2	R	Phase 3 power factor	Max.	-500 to +1000 to 500	×0.1%	83.0%	-	-
836	0344h	2	R	Σ Power factor	Max.	-500 to +1000 to 500	×0.1%	84.0%	84.0%	84.0%
837	0345h	2	R	Frequency	Max.	445 to 999	×0.1Hz	51.0Hz	51.0Hz	51.0Hz
838	0346h	2	R	Phase 1 active power	Max.	-16383 to 16383	kW	1012W	-	-
839	0347h	2	R	Phase 2 active power	Max.	-16383 to 16383	kW	1022W	-	-
840	0348h	2	R	Phase 3 active power	Max.	-16383 to 16383	kW	1032W	-	-
841	0349h	2	R	Σ Active power	Max.	-16383 to 16383	kW	1042W	1042W	1042W
842	034Ah	2	R	Reserved		0		-	-	-
843	034Bh	2	R	Reserved		0		-	-	-
844	034Ch	2	R	Reserved		0		-	-	-
845	034Dh	2	R	Reserved		0		-	-	-
846	034Eh	2	R	Phase 1 reactive power	Max.	-16383 to 16383	kvar	712var	-	-
847	034Fh	2	R	Phase 2 reactive power	Max.	-16383 to 16383	kvar	722var	-	-
848	0350h	2	R	Phase 3 reactive power	Max.	-16383 to 16383	kvar	732var	-	-
849	0351h	2	R	Σ Reactive power	Max.	-16383 to 16383	kvar	742var	742var	742var
850	0352h	2	R	Phase 1 apparent power	Max.	-16383 to 16383	kVA	1212VA	-	-
851	0353h	2	R	Phase 2 apparent power	Max.	-16383 to 16383	kVA	1222VA	-	-
852	0354h	2	R	Phase 3 apparent power	Max.	-16383 to 16383	kVA	1232VA	-	-
853	0355h	2	R	Σ Apparent power	Max.	-16383 to 16383	kVA	1242VA	-	-
854	0356h	2	R	Reserved		0		-	-	-
855	0357h	2	R	Reserved		0		-	-	-
856	0358h	2	R	Reserved		0		-	-	-
857	0359h	2	R	Reserved		0		-	-	-

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(4) Minimum Value Register

Address		byte count	R/W	Register Name		RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.							3P4W	3P3W 2CT	3P3W 3CT
858	035Ah	2	R	Phase 1 current	Min.	0 to 32767	A	4.10A	4.10A	4.10A
859	035Bh	2	R	Phase 2 current	Min.	0 to 32767	A	4.20A	4.50A	4.20A
860	035Ch	2	R	Phase 3 current	Min.	0 to 32767	A	4.60A	4.60A	4.60A
861	035Dh	2	R	Neutral current	Min.	0 to 32767	A	4.50A	-	-
862	035Eh	2	R	Average value current	Min.	0 to 32767	A	4.30A	4.40A	4.30A
863	035Fh	2	R	Phase 1 current demand	Min.	0 to 32767	A	4.10A	4.10A	4.10A
864	0360h	2	R	Phase 2 current demand	Min.	0 to 32767	A	4.20A	4.50A	4.20A
865	0361h	2	R	Phase 3 current demand	Min.	0 to 32767	A	4.60A	4.60A	4.60A
866	0362h	2	R	Neutral current demand	Min.	0 to 32767	A	4.50A	-	-
867	0363h	2	R	Average value curret demand	Min.	0 to 32767	A	4.30A	4.40A	4.30A
868	0364h	2	R	Voltage V12	Min.	0 to 32767	V	171.0V	101.0V	101.0V
869	0365h	2	R	Voltage V23	Min.	0 to 32767	V	172.0V	106.0V	106.0V
870	0366h	2	R	Voltage V31	Min.	0 to 32767	V	176.0V	176.0V	176.0V
871	0367h	2	R	Average value voltage(L-L)	Min.	0 to 32767	V	173.0V	127.7V	127.7V
872	0368h	2	R	Voltage V1N	Min.	0 to 32767	V	101.0V	-	-
873	0369h	2	R	Voltage V2N	Min.	0 to 32767	V	102.0V	-	-
874	036Ah	2	R	Voltage V3N	Min.	0 to 32767	V	106.0V	-	-
875	036Bh	2	R	Average value voltage(L-N)	Min.	0 to 32767	V	103.0V	-	-
876	036Ch	2	R	Phase 1 power factor	Min.	-500 to +1000 to 500	×0.1%	81.2%	-	-
877	036Dh	2	R	Phase 2 power factor	Min.	-500 to +1000 to 500	×0.1%	82.2%	-	-
878	036Eh	2	R	Phase 3 power factor	Min.	-500 to +1000 to 500	×0.1%	83.2%	-	-
879	036Fh	2	R	Σ Power factor	Min.	-500 to +1000 to 500	×0.1%	84.2%	84.2%	84.2%
880	0370h	2	R	Frequency	Min.	445 to 999	×0.1Hz	49.0Hz	49.0Hz	49.0Hz
881	0371h	2	R	Phase 1 active power	Min.	-16383 to 16383	kW	1010W	-	-
882	0372h	2	R	Phase 2 active power	Min.	-16383 to 16383	kW	1020W	-	-
883	0373h	2	R	Phase 3 active power	Min.	-16383 to 16383	kW	1030W	-	-
884	0374h	2	R	Σ Active power	Min.	-16383 to 16383	kW	1040W	1040W	1040W
885	0375h	2	R	Reserved		0		-	-	-
886	0376h	2	R	Reserved		0		-	-	-
887	0377h	2	R	Reserved		0		-	-	-
888	0378h	2	R	Reserved		0		-	-	-
889	0379h	2	R	Phase 1 reactive power	Min.	-16383 to 16383	kvar	710var	-	-
890	037Ah	2	R	Phase 2 reactive power	Min.	-16383 to 16383	kvar	720var	-	-
891	037Bh	2	R	Phase 3 reactive power	Min.	-16383 to 16383	kvar	730var	-	-
892	037Ch	2	R	Σ Reactive power	Min.	-16383 to 16383	kvar	740var	740var	740var
893	037Dh	2	R	Phase 1 apparent power	Min.	-16383 to 16383	kVA	1210VA	-	-
894	037Eh	2	R	Phase 2 apparent power	Min.	-16383 to 16383	kVA	1220VA	-	-
895	037Fh	2	R	Phase 3 apparent power	Min.	-16383 to 16383	kVA	1230VA	-	-
896	0380h	2	R	Σ Apparent power	Min.	-16383 to 16383	kVA	1240VA	-	-
897	0381h	2	R	Reserved		0		-	-	-
898	0382h	2	R	Reserved		0		-	-	-

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(5) Counting of Energy Register

Address Dec.	Hex.	byte count	R/W	Register Name		RANGE	Unit	Reply data(Note1) 3P4W	3P3W 2CT	3P3W 3CT
1280	0500h	2	R	Active energy	import	less than 1000	kWh	666	666	666
1281	0501h	2	R			1000 or more		666	666	666
1282	0502h	2	R	Active energy	export	less than 1000	kWh	555	555	555
1283	0503h	2	R			1000 or more		555	555	555
1284	0504h	2	R	Reactive energy	import LAG	less than 1000	kvarh	444	444	444
1285	0505h	2	R			1000 or more		444	444	444
1286	0506h	2	R	Reactive energy	export LAG	less than 1000	kvarh	333	333	333
1287	0507h	2	R			1000 or more		333	333	333
1288	0508h	2	R	Reactive energy	import LEAD	less than 1000	kvarh	222	222	222
1289	0509h	2	R			1000 or more		222	222	222
1290	050Ah	2	R	Reactive energy	export LEAD	less than 1000	kvarh	111	111	111
1291	050Bh	2	R			1000 or more		111	111	111
1292	050Ch	2	R	Extended active energy	import	less than 1000	kWh	666	666	666
1293	050Dh	2	R			1000 or more		666	666	666
1294	050Eh	2	R	Extended active energy	export	less than 1000	kWh	555	555	555
1295	050Fh	2	R			1000 or more		555	555	555
1296	0510h	2	R	Extended reactive energy	import LAG	less than 1000	kvarh	444	444	444
1297	0511h	2	R			1000 or more		444	444	444
1298	0512h	2	R	Extended reactive energy	export LAG	less than 1000	kvarh	333	333	333
1299	0513h	2	R			1000 or more		333	333	333
1300	0514h	2	R	Extended reactive energy	import LEAD	less than 1000	kvarh	222	222	222
1301	0515h	2	R			1000 or more		222	222	222
1302	0516h	2	R	Extended reactive energy	export LEAD	less than 1000	kvarh	111	111	111
1303	0517h	2	R			1000 or more		111	111	111
1304	0518h	4	R/W	Active energy	import	0 to 999999	kWh	666666	666666	666666
1306	051Ah	4	R/W	Active energy	export	0 to 999999	kWh	555555	555555	555555
1308	051Ch	4	R/W	Reactive energy	import LAG	0 to 999999	kvarh	444444	444444	444444
1310	051Eh	4	R/W	Reactive energy	export LAG	0 to 999999	kvarh	333333	333333	333333
1312	0520h	4	R/W	Reactive energy	import LEAD	0 to 999999	kvarh	222222	222222	222222
1314	0522h	4	R/W	Reactive energy	export LEAD	0 to 999999	kvarh	111111	111111	111111
1316	0524h	4	R	Extended active energy	import	0 to 999999	kWh	666666	666666	666666
1318	0526h	4	R	Extended active energy	export	0 to 999999	kWh	555555	555555	555555
1320	0528h	4	R	Extended reactive energy	import LAG	0 to 999999	kvarh	444444	444444	444444
1322	052Ah	4	R	Extended reactive energy	export LAG	0 to 999999	kvarh	333333	333333	333333
1324	052Ch	4	R	Extended reactive energy	import LEAD	0 to 999999	kvarh	222222	222222	222222
1326	052Eh	4	R	Extended reactive energy	export LEAD	0 to 999999	kvarh	111111	111111	111111

Note1. Counting values reply values of primary side.

(6) Alarm Value Register

Address		byte count	R/W	Register Name	RANGE ※2	Unit	Reply data(secondary side)		
Dec.	Hex.						3P4W	3P3W_2CT	3P3W_3CT
1536	0600h	4	R/W	Current demand upper limit	0 to 4000000	×0.01A	-	-	-
1538	0602h	4	R/W	Voltage(L-N) upper limit	0 to 75000000	×0.01V	-	-	-
1540	0604h	4	R/W	Current upper limit	0 to 4000000	×0.01A	-	-	-
1542	0606h	4	R/W	Power factor upper limit	-500 to +1000 to 500	×0.1%	-	-	-
1544	0608h	4	R/W	Frequency upper limit	445 to 665	×0.1Hz	-	-	-
1546	060Ah	4	R/W	Harmonics current upper limit	0 to 1000	×0.1%	-	-	-
1548	060Ch	4	R/W	THD voltage upper limit	0 to 200	×0.1%	-	-	-
1550	060Eh	4	R	Reserved	0		-	-	-
1552	0610h	4	R/W	Active power upper limit	-1638300000 to 1638300000	W	-	-	-
1554	0612h	4	R/W	Reactive power upper limit	-1638300000 to 1638300000	var	-	-	-
1556	0614h	4	R/W	Current demand lower limit	0 to 4000000	×0.01A	-	-	-
1558	0616h	4	R/W	Voltage(L-N) lower limit	0 to 75000000	×0.01V	-	-	-
1560	0618h	4	R/W	Current lower limit	0 to 4000000	×0.01A	-	-	-
1562	061Ah	4	R/W	Power factor lower limit	-500 to +1000 to 500	×0.1%	-	-	-
1564	061Ch	4	R/W	Frequency lower limit	445 to 665	×0.1Hz	-	-	-
1566	061Eh	4	R	Reserved	0		-	-	-
1568	0620h	4	R/W	Active power lower limit	-1638300000 to 1638300000	W	-	-	-
1570	0622h	4	R/W	Reactive power lower limit	-1638300000 to 1638300000	var	-	-	-
1572	0624h	4	R/W	Neutral current demand lower limit	0 to 4000000	×0.01A	-	-	-
1574	0626h	4	R/W	Neutral current lower limit	0 to 4000000	×0.01A	-	-	-
1576	0628h	4	R/W	Neutral harmonics current lower limit	0 to 1000	×0.1%	-	-	-
1578	062Ah	4	R/W	Voltage(L-L) upper limit	0 to 75000000	×0.01V	-	-	-
1580	062Ch	4	R/W	Voltage(L-L) lower limit	0 to 75000000	×0.01V	-	-	-

(7) Harmonics Value Register

Address		byte count	R/W	Register Name		RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.							3P4W	3P3W_2CT	3P3W_3CT
1792	0700h	2	R	Harmonics value V1N	Total	0 to 32767	V	78.9V	-	-
1793	0701h	2	R	Harmonics value V2N	Total	0 to 32767	V	73.2V	-	-
1794	0702h	2	R	Harmonics value V3N	Total	0 to 32767	V	79.3V	-	-
1795	0703h	2	R	Harmonics value V1N	1st	0 to 32767	V	91.1V	-	-
1796	0704h	2	R	Harmonics value V2N	1st	0 to 32767	V	91.2V	-	-
1797	0705h	2	R	Harmonics value V3N	1st	0 to 32767	V	91.3V	-	-
1798	0706h	2	R	Harmonics value V1N	3rd	0 to 32767	V	36.1V	-	-
1799	0707h	2	R	Harmonics value V2N	3rd	0 to 32767	V	36.2V	-	-
1800	0708h	2	R	Harmonics value V3N	3rd	0 to 32767	V	35.9V	-	-
1801	0709h	2	R	Harmonics value V1N	5th	0 to 32767	V	35.1V	-	-
1802	070Ah	2	R	Harmonics value V2N	5th	0 to 32767	V	16.8V	-	-
1803	070Bh	2	R	Harmonics value V3N	5th	0 to 32767	V	34.9V	-	-
1804	070Ch	2	R	Harmonics value V1N	7th	0 to 32767	V	34.1V	-	-
1805	070Dh	2	R	Harmonics value V2N	7th	0 to 32767	V	34.2V	-	-
1806	070Eh	2	R	Harmonics value V3N	7th	0 to 32767	V	34.3V	-	-
1807	070Fh	2	R	Harmonics value V1N	9th	0 to 32767	V	33.1V	-	-
1808	0710h	2	R	Harmonics value V2N	9th	0 to 32767	V	33.2V	-	-
1809	0711h	2	R	Harmonics value V3N	9th	0 to 32767	V	33.3V	-	-
1810	0712h	2	R	Harmonics value V1N	11th	0 to 32767	V	32.1V	-	-
1811	0713h	2	R	Harmonics value V2N	11th	0 to 32767	V	32.2V	-	-
1812	0714h	2	R	Harmonics value V3N	11th	0 to 32767	V	32.3V	-	-
1813	0715h	2	R	Harmonics value V1N	13th	0 to 32767	V	20.1V	-	-
1814	0716h	2	R	Harmonics value V2N	13th	0 to 32767	V	21.2V	-	-
1815	0717h	2	R	Harmonics value V3N	13th	0 to 32767	V	21.3V	-	-
2048	0800h	2	R	Harmonics value V12	Total	0 to 32767	V	-	78.9V	78.9V
2049	0801h	2	R	Harmonics value V23	Total	0 to 32767	V	-	79.3V	79.3V
2050	0802h	2	R	Reserved		0		-	-	-
2051	0803h	2	R	Harmonics value V12	1st	0 to 32767	V	-	91.1V	91.1V
2052	0804h	2	R	Harmonics value V23	1st	0 to 32767	V	-	91.3V	91.3V
2053	0805h	2	R	Reserved		0		-	-	-
2054	0806h	2	R	Harmonics value V12	3rd	0 to 32767	V	-	36.1V	36.1V
2055	0807h	2	R	Harmonics value V23	3rd	0 to 32767	V	-	35.9V	35.9V
2056	0808h	2	R	Reserved		0		-	-	-
2057	0809h	2	R	Harmonics value V12	5th	0 to 32767	V	-	35.1V	35.1V
2058	080Ah	2	R	Harmonics value V23	5th	0 to 32767	V	-	34.9V	34.9V
2059	080Bh	2	R	Reserved		0		-	-	-
2060	080Ch	2	R	Harmonics value V12	7th	0 to 32767	V	-	34.1V	34.1V
2061	080Dh	2	R	Harmonics value V23	7th	0 to 32767	V	-	34.3V	34.3V
2062	080Eh	2	R	Reserved		0		-	-	-
2063	080Fh	2	R	Harmonics value V12	9th	0 to 32767	V	-	33.1V	33.1V
2064	0810h	2	R	Harmonics value V23	9th	0 to 32767	V	-	33.3V	33.3V
2065	0811h	2	R	Reserved		0		-	-	-
2066	0812h	2	R	Harmonics value V12	11th	0 to 32767	V	-	32.1V	32.1V
2067	0813h	2	R	Harmonics value V23	11th	0 to 32767	V	-	32.3V	32.3V
2068	0814h	2	R	Reserved		0		-	-	-
2069	0815h	2	R	Harmonics value V12	13th	0 to 32767	V	-	20.1V	20.1V
2070	0816h	2	R	Harmonics value V23	13th	0 to 32767	V	-	21.3V	21.3V
2071	0817h	2	R	Reserved		0		-	-	-

Harmonics Value Register

Address		byte count	R/W	Register Name		RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.							3P4W	3P3W _2CT	3P3W _3CT
2304	0900h	2	R	Harmonics value I1	Total	0 to 32767	A	3.15A	3.15A	3.15A
2305	0901h	2	R	Harmonics value I2	Total	0 to 32767	A	3.07A	2.92A	3.07A
2306	0902h	2	R	Harmonics value I3	Total	0 to 32767	A	2.99A	2.99A	2.99A
2307	0903h	2	R	Harmonics value IN	Total	0 to 32767	A	2.92A	-	-
2308	0904h	2	R	Harmonics value I1	1st	0 to 32767	A	3.71A	3.71A	3.71A
2309	0905h	2	R	Harmonics value I2	1st	0 to 32767	A	3.72A	3.75A	3.72A
2310	0906h	2	R	Harmonics value I3	1st	0 to 32767	A	3.73A	3.73A	3.73A
2311	0907h	2	R	Harmonics value IN	1st	0 to 32767	A	3.75A	-	-
2312	0908h	2	R	Harmonics value I1	3rd	0 to 32767	A	1.63A	1.63A	1.63A
2313	0909h	2	R	Harmonics value I2	3rd	0 to 32767	A	1.60A	1.54A	1.60A
2314	090Ah	2	R	Harmonics value I3	3rd	0 to 32767	A	1.57A	1.57A	1.57A
2315	090Bh	2	R	Harmonics value IN	3rd	0 to 32767	A	1.54A	-	-
2316	090Ch	2	R	Harmonics value I1	5th	0 to 32767	A	1.48A	1.48A	1.48A
2317	090Dh	2	R	Harmonics value I2	5th	0 to 32767	A	1.45A	1.39A	1.45A
2318	090Eh	2	R	Harmonics value I3	5th	0 to 32767	A	1.42A	1.42A	1.42A
2319	090Fh	2	R	Harmonics value IN	5th	0 to 32767	A	1.39A	-	-
2320	0910h	2	R	Harmonics value I1	7th	0 to 32767	A	1.34A	1.34A	1.34A
2321	0911h	2	R	Harmonics value I2	7th	0 to 32767	A	1.30A	1.24A	1.30A
2322	0912h	2	R	Harmonics value I3	7th	0 to 32767	A	1.27A	1.27A	1.27A
2323	0913h	2	R	Harmonics value IN	7th	0 to 32767	A	1.24A	-	-
2324	0914h	2	R	Harmonics value I1	9th	0 to 32767	A	1.19A	1.19A	1.19A
2325	0915h	2	R	Harmonics value I2	9th	0 to 32767	A	1.15A	1.09A	1.15A
2326	0916h	2	R	Harmonics value I3	9th	0 to 32767	A	1.12A	1.12A	1.12A
2327	0917h	2	R	Harmonics value IN	9th	0 to 32767	A	1.09A	-	-
2328	0918h	2	R	Harmonics value I1	11th	0 to 32767	A	1.04A	1.04A	1.04A
2329	0919h	2	R	Harmonics value I2	11th	0 to 32767	A	1.00A	0.94A	1.00A
2330	091Ah	2	R	Harmonics value I3	11th	0 to 32767	A	0.97A	0.97A	0.97A
2331	091Bh	2	R	Harmonics value IN	11th	0 to 32767	A	0.94A	-	-
2332	091Ch	2	R	Harmonics value I1	13th	0 to 32767	A	0.89A	0.89A	0.89A
2333	091Dh	2	R	Harmonics value I2	13th	0 to 32767	A	0.86A	0.79A	0.86A
2334	091Eh	2	R	Harmonics value I3	13th	0 to 32767	A	0.82A	0.82A	0.82A
2335	091Fh	2	R	Harmonics value IN	13th	0 to 32767	A	0.79A	-	-
2560	0A00h	2	R	THD V1N	Total	0 to 1000	×0.1%	86.6%	-	-
2561	0A01h	2	R	THD V2N	Total	0 to 1000	×0.1%	80.2%	-	-
2562	0A02h	2	R	THD V3N	Total	0 to 1000	×0.1%	86.9%	-	-
2563	0A03h	2	R	Harmonics ratio V1N	3rd	0 to 1000	×0.1%	39.6%	-	-
2564	0A04h	2	R	Harmonics ratio V2N	3rd	0 to 1000	×0.1%	39.7%	-	-
2565	0A05h	2	R	Harmonics ratio V3N	3rd	0 to 1000	×0.1%	39.3%	-	-
2566	0A06h	2	R	Harmonics ratio V1N	5th	0 to 1000	×0.1%	38.5%	-	-
2567	0A07h	2	R	Harmonics ratio V2N	5th	0 to 1000	×0.1%	18.4%	-	-
2568	0A08h	2	R	Harmonics ratio V3N	5th	0 to 1000	×0.1%	38.2%	-	-
2569	0A09h	2	R	Harmonics ratio V1N	7th	0 to 1000	×0.1%	37.4%	-	-
2570	0A0Ah	2	R	Harmonics ratio V2N	7th	0 to 1000	×0.1%	37.5%	-	-
2571	0A0Bh	2	R	Harmonics ratio V3N	7th	0 to 1000	×0.1%	37.6%	-	-
2572	0A0Ch	2	R	Harmonics ratio V1N	9th	0 to 1000	×0.1%	36.3%	-	-
2573	0A0Dh	2	R	Harmonics ratio V2N	9th	0 to 1000	×0.1%	36.4%	-	-
2574	0A0Eh	2	R	Harmonics ratio V3N	9th	0 to 1000	×0.1%	36.5%	-	-
2575	0A0Fh	2	R	Harmonics ratio V1N	11th	0 to 1000	×0.1%	35.2%	-	-
2576	0A10h	2	R	Harmonics ratio V2N	11th	0 to 1000	×0.1%	35.3%	-	-
2577	0A11h	2	R	Harmonics ratio V3N	11th	0 to 1000	×0.1%	35.4%	-	-
2578	0A12h	2	R	Harmonics ratio V1N	13th	0 to 1000	×0.1%	22.1%	-	-
2579	0A13h	2	R	Harmonics ratio V2N	13th	0 to 1000	×0.1%	23.2%	-	-
2580	0A14h	2	R	Harmonics ratio V3N	13th	0 to 1000	×0.1%	23.3%	-	-

Harmonics Value Register

Address		byte count	R/W	Register Name		RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.							3P4W	3P3W_2CT	3P3W_3CT
2816	0B00h	2	R	THD V12	Total	0 to 1000	×0.1%	-	86.6%	86.6%
2817	0B01h	2	R	THD V23	Total	0 to 1000	×0.1%	-	86.9%	86.9%
2818	0B02h	2	R	Reserved		0		-	-	-
2819	0B03h	2	R	Harmonics ratio V12	3rd	0 to 1000	×0.1%	-	39.6%	39.6%
2820	0B04h	2	R	Harmonics ratio V23	3rd	0 to 1000	×0.1%	-	39.3%	39.3%
2821	0B05h	2	R	Reserved		0		-	-	-
2822	0B06h	2	R	Harmonics ratio V12	5th	0 to 1000	×0.1%	-	38.5%	38.5%
2823	0B07h	2	R	Harmonics ratio V23	5th	0 to 1000	×0.1%	-	38.2%	38.2%
2824	0B08h	2	R	Reserved		0		-	-	-
2825	0B09h	2	R	Harmonics ratio V12	7th	0 to 1000	×0.1%	-	37.4%	37.4%
2826	0B0Ah	2	R	Harmonics ratio V23	7th	0 to 1000	×0.1%	-	37.6%	37.6%
2827	0B0Bh	2	R	Reserved		0		-	-	-
2828	0B0Ch	2	R	Harmonics ratio V12	9th	0 to 1000	×0.1%	-	36.3%	36.3%
2829	0B0Dh	2	R	Harmonics ratio V23	9th	0 to 1000	×0.1%	-	36.5%	36.5%
2830	0B0Eh	2	R	Reserved		0		-	-	-
2831	0B0Fh	2	R	Harmonics ratio V12	11th	0 to 1000	×0.1%	-	35.2%	35.2%
2832	0B10h	2	R	Harmonics ratio V23	11th	0 to 1000	×0.1%	-	35.4%	35.4%
2833	0B11h	2	R	Reserved		0		-	-	-
2834	0B12h	2	R	Harmonics ratio V12	13th	0 to 1000	×0.1%	-	22.1%	22.1%
2835	0B13h	2	R	Harmonics ratio V23	13th	0 to 1000	×0.1%	-	23.3%	23.3%
2836	0B14h	2	R	Reserved		0		-	-	-
3072	0C00h	2	R	THD I1	Total	0 to 1000	×0.1%	84.9%	84.9%	84.9%
3073	0C01h	2	R	THD I2	Total	0 to 1000	×0.1%	82.5%	77.9%	82.5%
3074	0C02h	2	R	THD I3	Total	0 to 1000	×0.1%	80.3%	80.3%	80.3%
3075	0C03h	2	R	THD IN	Total	0 to 1000	×0.1%	77.9%		
3076	0C04h	2	R	Harmonics ratio I1	3rd	0 to 1000	×0.1%	43.9%	43.9%	43.9%
3077	0C05h	2	R	Harmonics ratio I2	3rd	0 to 1000	×0.1%	43.0%	41.1%	43.0%
3078	0C06h	2	R	Harmonics ratio I3	3rd	0 to 1000	×0.1%	42.1%	42.1%	42.1%
3079	0C07h	2	R	Harmonics ratio IN	3rd	0 to 1000	×0.1%	41.1%	-	-
3080	0C08h	2	R	Harmonics ratio I1	5th	0 to 1000	×0.1%	39.9%	39.9%	39.9%
3081	0C09h	2	R	Harmonics ratio I2	5th	0 to 1000	×0.1%	39.0%	37.1%	39.0%
3082	0C0Ah	2	R	Harmonics ratio I3	5th	0 to 1000	×0.1%	38.1%	38.1%	38.1%
3083	0C0Bh	2	R	Harmonics ratio IN	5th	0 to 1000	×0.1%	37.1%	-	-
3084	0C0Ch	2	R	Harmonics ratio I1	7th	0 to 1000	×0.1%	36.1%	36.1%	36.1%
3085	0C0Dh	2	R	Harmonics ratio I2	7th	0 to 1000	×0.1%	34.9%	33.1%	34.9%
3086	0C0Eh	2	R	Harmonics ratio I3	7th	0 to 1000	×0.1%	34.0%	34.0%	34.0%
3087	0C0Fh	2	R	Harmonics ratio IN	7th	0 to 1000	×0.1%	33.1%	-	-
3088	0C10h	2	R	Harmonics ratio I1	9th	0 to 1000	×0.1%	32.1%	32.1%	32.1%
3089	0C11h	2	R	Harmonics ratio I2	9th	0 to 1000	×0.1%	30.9%	29.1%	30.9%
3090	0C12h	2	R	Harmonics ratio I3	9th	0 to 1000	×0.1%	30.0%	30.0%	30.0%
3091	0C13h	2	R	Harmonics ratio IN	9th	0 to 1000	×0.1%	29.1%	-	-
3092	0C14h	2	R	Harmonics ratio I1	11th	0 to 1000	×0.1%	28.0%	28.0%	28.0%
3093	0C15h	2	R	Harmonics ratio I2	11th	0 to 1000	×0.1%	26.9%	25.1%	26.9%
3094	0C16h	2	R	Harmonics ratio I3	11th	0 to 1000	×0.1%	26.0%	26.0%	26.0%
3095	0C17h	2	R	Harmonics ratio IN	11th	0 to 1000	×0.1%	25.1%	-	-
3096	0C18h	2	R	Harmonics ratio I1	13th	0 to 1000	×0.1%	24.0%	24.0%	24.0%
3097	0C19h	2	R	Harmonics ratio I2	13th	0 to 1000	×0.1%	23.1%	21.1%	23.1%
3098	0C1Ah	2	R	Harmonics ratio I3	13th	0 to 1000	×0.1%	22.0%	22.0%	22.0%
3099	0C1Bh	2	R	Harmonics ratio IN	13th	0 to 1000	×0.1%	21.1%	-	-

(8) Harmonics Maximum Value Register

Address		byte count	R/W	Register Name			RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.								3P4W	3P3W _2CT	3P3W _3CT
3328	0D00h	2	R	Reserved			0		-	-	-
3329	0D01h	2	R	Harmonics value V(L-N)	1st	Max.	0 to 32767	V	91.8V	-	-
3330	0D02h	2	R	Reserved			0		-	-	-
3331	0D03h	2	R	Reserved			0		-	-	-
3332	0D04h	2	R	Reserved			0		-	-	-
3333	0D05h	2	R	Reserved			0		-	-	-
3334	0D06h	2	R	Reserved			0		-	-	-
3335	0D07h	2	R	Reserved			0		-	-	-
3584	0E00h	2	R	Reserved			0		-	-	-
3585	0E01h	2	R	Harmonics value V(L-L)	1st	Max.	0 to 32767	V	-	91.8V	91.8V
3586	0E02h	2	R	Reserved			0		-	-	-
3587	0E03h	2	R	Reserved			0		-	-	-
3588	0E04h	2	R	Reserved			0		-	-	-
3589	0E05h	2	R	Reserved			0		-	-	-
3590	0E06h	2	R	Reserved			0		-	-	-
3591	0E07h	2	R	Reserved			0		-	-	-
3840	0F00h	2	R	Harmonics value current	Total	Max.	0 to 32767	A	3.48A	3.51A	3.48A
3841	0F01h	2	R	Harmonics value current	1st	Max.	0 to 32767	A	3.76A	3.77A	3.76A
3842	0F02h	2	R	Harmonics value current	3rd	Max.	0 to 32767	A	1.66A	1.67A	1.66A
3843	0F03h	2	R	Harmonics value current	5th	Max.	0 to 32767	A	1.56A	1.58A	1.56A
3844	0F04h	2	R	Harmonics value current	7th	Max.	0 to 32767	A	1.46A	1.47A	1.46A
3845	0F05h	2	R	Harmonics value current	9th	Max.	0 to 32767	A	1.36A	1.37A	1.36A
3846	0F06h	2	R	Harmonics value current	11th	Max.	0 to 32767	A	1.26A	1.28A	1.26A
3847	0F07h	2	R	Harmonics value current	13th	Max.	0 to 32767	A	1.16A	1.17A	1.16A
3848	0F08h	2	R	Reserved			0		-	-	-
3849	0F09h	2	R	Reserved			0		-	-	-
3850	0F0Ah	2	R	Reserved			0		-	-	-
3851	0F0Bh	2	R	Reserved			0		-	-	-
3852	0F0Ch	2	R	Reserved			0		-	-	-
3853	0F0Dh	2	R	Reserved			0		-	-	-
3854	0F0Eh	2	R	Reserved			0		-	-	-
3855	0F0Fh	2	R	Harmonics value neutral current	Total	Max.	0 to 32767	A	3.51A	-	-
3856	0F10h	2	R	Reserved			0		-	-	-
3857	0F11h	2	R	Reserved			0		-	-	-
3858	0F12h	2	R	Reserved			0		-	-	-
3859	0F13h	2	R	Harmonics value neutral current	1st	Max.	0 to 32767	A	3.77A	-	-
3860	0F14h	2	R	Reserved			0		-	-	-
3861	0F15h	2	R	Reserved			0		-	-	-
3862	0F16h	2	R	Reserved			0		-	-	-
3863	0F17h	2	R	Harmonics value neutral current	3rd	Max.	0 to 32767	A	1.67A	-	-
3864	0F18h	2	R	Reserved			0		-	-	-
3865	0F19h	2	R	Reserved			0		-	-	-
3866	0F1Ah	2	R	Reserved			0		-	-	-
3867	0F1Bh	2	R	Harmonics value neutral current	5th	Max.	0 to 32767	A	1.58A	-	-
3868	0F1Ch	2	R	Reserved			0		-	-	-
3869	0F1Dh	2	R	Reserved			0		-	-	-
3870	0F1Eh	2	R	Reserved			0		-	-	-
3871	0F1Fh	2	R	Harmonics value neutral current	7th	Max.	0 to 32767	A	1.47A	-	-
3872	0F20h	2	R	Reserved			0		-	-	-
3873	0F21h	2	R	Reserved			0		-	-	-
3874	0F22h	2	R	Reserved			0		-	-	-
3875	0F23h	2	R	Harmonics value neutral current	9th	Max.	0 to 32767	A	1.37A	-	-
3876	0F24h	2	R	Reserved			0		-	-	-
3877	0F25h	2	R	Reserved			0		-	-	-
3878	0F26h	2	R	Reserved			0		-	-	-
3879	0F27h	2	R	Harmonics value neutral current	11th	Max.	0 to 32767	A	1.28A	-	-
3880	0F28h	2	R	Reserved			0		-	-	-
3881	0F29h	2	R	Reserved			0		-	-	-
3882	0F2Ah	2	R	Reserved			0		-	-	-
3883	0F2Bh	2	R	Harmonics value neutral current	13th	Max.	0 to 32767	A	1.17A	-	-

Harmonics Maximum Value Register

Address		byte count	R/W	Register Name			RANGE	Unit	Reply data(secondary side)		
Dec.	Hex.								3P4W	3P3W_2CT	3P3W_3CT
4096	1000h	2	R	THD voltage	Total	Max.	0 to 1000	×0.1%	91.7%	-	-
4097	1001h	2	R	Harmonics ratio voltage(L-N)	3rd	Max.	0 to 1000	×0.1%	40.1%	-	-
4098	1002h	2	R	Harmonics ratio voltage(L-N)	5th	Max.	0 to 1000	×0.1%	39.1%	-	-
4099	1003h	2	R	Harmonics ratio voltage(L-N)	7th	Max.	0 to 1000	×0.1%	37.9%	-	-
4100	1004h	2	R	Harmonics ratio voltage(L-N)	9th	Max.	0 to 1000	×0.1%	36.8%	-	-
4101	1005h	2	R	Harmonics ratio voltage(L-N)	11th	Max.	0 to 1000	×0.1%	35.7%	-	-
4102	1006h	2	R	Harmonics ratio voltage(L-N)	13th	Max.	0 to 1000	×0.1%	34.6%	-	-
4352	1100h	2	R	THD voltage	Total	Max.	0 to 1000	×0.1%	-	91.7%	91.7%
4353	1101h	2	R	Harmonics ratio voltage(L-L)	3rd	Max.	0 to 1000	×0.1%	-	40.1%	40.1%
4354	1102h	2	R	Harmonics ratio voltage(L-L)	5th	Max.	0 to 1000	×0.1%	-	39.1%	39.1%
4355	1103h	2	R	Harmonics ratio voltage(L-L)	7th	Max.	0 to 1000	×0.1%	-	37.9%	37.9%
4356	1104h	2	R	Harmonics ratio voltage(L-L)	9th	Max.	0 to 1000	×0.1%	-	36.8%	36.8%
4357	1105h	2	R	Harmonics ratio voltage(L-L)	11th	Max.	0 to 1000	×0.1%	-	35.7%	35.7%
4358	1106h	2	R	Harmonics ratio voltage(L-L)	13th	Max.	0 to 1000	×0.1%	-	34.6%	34.6%
4608	1200h	2	R	Reserved			0		-	-	-
4609	1201h	2	R	Reserved			0		-	-	-
4610	1202h	2	R	Reserved			0		-	-	-
4611	1203h	2	R	Reserved			0		-	-	-
4612	1204h	2	R	Reserved			0		-	-	-
4613	1205h	2	R	Reserved			0		-	-	-
4614	1206h	2	R	Reserved			0		-	-	-